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Original Communications

TREATMENT OF EPITHELIOMA OF THE FACE AND EYELID

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During my internship in a hospital where all the treatment of malignancy was by surgery, and all the surgery was for malignancy, I had ample opportunity to see that the usual cancer of the eyelid was not the field for operative intervention. Indeed, fifteen years ago the excision of cancer of the lid was practiced with the same techinque and instruments as it was years before, so that is is perfectly true that surgery has contributed nothing new in this field, during the last quarter of a century.

Arsenical pastes and acids, along with deep curettements, were employed years ago, and discarded because they had many of the disadvantages of excisions. Heat cauteries of various kinds are difficult to employ, for fear of injuring the eye and sight, later the wounds heal, leaving a cicatrix, which we all know tends to contract, producing deformities of the lid. The various forms of electric cauterization, as the Oudin, d'Arsonval, desiccation, coagulation, and radio knife have some minor advantages over excision, but none of them are selective in their action. Every one sacrifices a portion of the lid and produces a scar, which may require a future plastic operation to correct.

Working in such close proximity to an invaluable organ as the eye, and having to deal with such thin, delicate tissues, as the lid, which must be preserved in its entirety, in order that it may fulfil its offices of protection, etc., this work calls for the unusual in therapeutics. The average destructive agent, be it knife, caustic or cautery, may have its enthusiasts in other fields, but not when dealing with cancer of the eyelid. A method of selective therapeutics is required. We might, as a figure of speech, say that an agent which seeks out the cancer cells is required; one that will dissolve and destroy malignant cells without at the same time permanently damaging the normal cells and tissues of the lid, is what we strive for in these patients.

Nos. 1-3-4.—Three patients with modular ulcerating syphiloderm of the face. A lesion frequently diagnosed lupus and epithelioma. Each of these patients was referred for x-ray or radium therapy. No. 2 was omitted.

*Read before the joint meeting of the Radiological, and the Ear, Eye, Nose and Throat Section, of the District Medical Society, April 17, 1925.

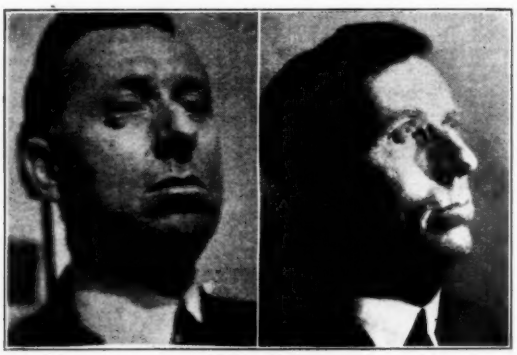
Abstract read before the Medical Society of Virginia, Maryland and the District of Columbia, at Warrenton, Virginia, May 21, 1925.

XUM

There are but two agents known to the profession which have such an action, x-ray and radium. To secure a cure with either is to leave the patient's lid in almost as perfect a condition as if no neoplasm ever existed. No eversion, ectropia or destruction of the lid substance is produced, nor are such cosmetic results approached with any other therapeutic agent.

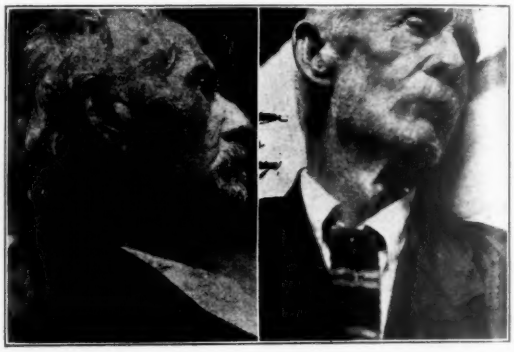
Nos. 5-6.—Epithelioma before and after radium therapy.

After closely observing the effects of both x-ray and radium for a number of years, it is becoming increasingly apparent to me, that there exists among certain skin lesions a difference in their radio sensitivity. Time and actual experience teach us that while the physics of the two agents may be somewhat similar, there does exist a difference in the biologic and clinical effects of x-ray and radium. For some time dermatologists have been able to



Nos. 7-8.—Epithelioma before and after radium therapy.

demonstrate a difference between the effect of the two agents in leukoplakia, cavernous angioma and lupus erythematodes. MacKee states he has never seen an epithelioma healed by x-ray, after failure of radium, which agrees with my experience. In an article I published in the *Cutaneous Review*, last year, I cited a number of instances, where epitheliomas, intensively treated with filtered x-ray, in my own and other laboratories, failed to resolute, even after intense skin reactions. In many of these patients I secured prompt destruction and healing of these lesions with a triple strength radium plaque, although the filtration, cutaneous reactions, and duration of the dermatitis, were similar in the two instances.



Nos. 9-10.—Epithelioma before and after x-ray therapy. (1) massive filtered dose; (2) erythemas, 3 mm. filter, 5 mill.

As to the type of the radium applicator, I am sure the flat plaque offers many advantages over the radium pack or needles applied to the surface of the tumors. In the plaque the radium element is covered with a rubber composition which filters out less than 5 per cent of the B-ray. This allows 95 per cent of the soft ray to reach the surface lesion. If one uses a metal capsule or needle containing the radium element, the metal wall of the needle filters out 90 per cent of the very type of ray one wishes to use. If the malignancy is extensive or very deep, the hard G-ray is needed to get a result and here one had better employ the metal walled needles, but for the average lid epithelioma which is diagnosed early, the flat plaque giving off the B-ray is much superior. In addition to this the radium plaque has the advantage of not producing the local traumatism and caustic effects always found at the seat of implantations, of either radium emanation seeds or radium needles. This local injury and caustic action of needles retards convalescence, and produces all the subjective and objective signs of inflammation, which we know by experience is conspicious for its persistence and irritating character.

The disadvantage of the plaque is that many are being sold which are only half the full strength. Indeed I know of one used in this city which was one-fourth strength. My first

No. 11.—Epithelioma forehead, size silver dollar, healed with one massive dose of filtered x-ray, two erythemas, 3 mm. alum, after failure of twenty fractional doses of x-ray.

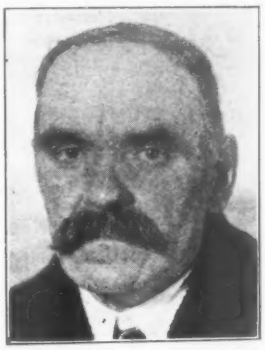
applicator used five years ago, was a half strength one, and proved to me that it was entirely too weak to be reliable.

Nos. 12-13.—Epithelioma upper lid, colored patient, rare lesion. Malignancy in this location responds better to strong radium plaque than to x-ray.

I admit that a demonstration of this difference in radio sensibility of lid epitheliomas may be recent and somewhat original, there being little or no literature on the subject, and that while the relative efficiency may be obscure to some physicians, it does not apply to the convenience in the use of the two methods of treatment. This applies to both patient and physician. The great majority of patients with epitheliomas of the lid are over fifty years old, and many suffer from the infirmities of old age, with its consequent timidity and nervousness. The mere placing of the patient on the operating table and adjusting lead rubber and foil over their head and eyes for protection constitutes a trial and hardship for them. To be thus blindfolded

No. 14.—Epithelioma upper lid, result after radium plaque, shows no deformity of lid except alopecia of lashes.

and in the same room with whirling machinery, with its consequent din, and at times sickening sulphur-like odors, is an experience that few care to repeat. Compare this to the adjustment of a small radium plaque, the size of a finger nail, to the lid, with the patient seated in the waiting room, or even his own home with relatives and friends, constitutes a refinement in technique that the old appreciate. The diagnosis of epithelioma of the face and eyelid is most important, and not always easy, as I shall attempt to show.

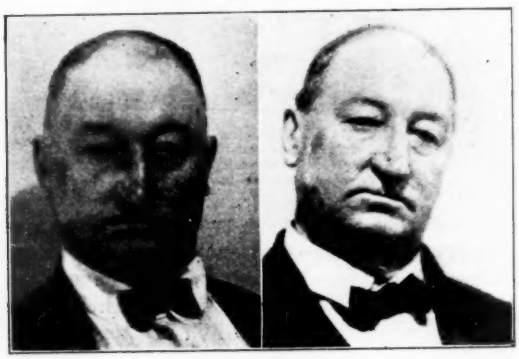


No. 15.—Epithelioma lower lid, results after radium plaque, no deformity or destruction of lid tissue, alopecia lashes of lower lid.

It is quite often most difficult to differentiate this lesion from verruca, lupus and syphilis. To discern the merging of a wart, a molluscum, a chronic granulating wound, or a per-

sistent cyst or hordeolum into malignancy, often calls for shrewd judgment and diagnostic skill.

I am a firm believer in correct and early diagnosis in epitheliomas in general and lid malignancy in particular. Experience in a large dermatological or eye clinic is the only place this can be obtained. Text-books will familiarize one with the literature of the subject, but they were never intended to take the place of wholesome, efficient, clinical instruction in the largest American and European



Nos. 16-17.—Epithelioma of nose before and after treatment, radium plaque, 1/10 mm. Al., 3 hour duration.

Clinics. By such instruction one becomes acquainted with the unusual benign lesions which may closely simulate malignancy, and which frequently are exposed to extensive radiation

No. 18.—Epithelioma, prickle cell, developed on lesion of lupus erythematosis. Healed by combination of electro-coagulation and radium plaque, a rare lesion.

with disastrous results. I find many physicians who daily treat syphilis, even specialize on the subject, totally fail to recognize the late and unusual single, grouped, tubercular, ulcerating, syphiloderm, which so closely simulates epithelioma and lupus. So that a familiarity with the benign lesions of the face is quite as important as some knowledge of malignancy and radio-therapy. For one to be uncertain of his diagnosis invites failure, and denotes carelessness of preparation, for what is considered delicate and scientific radio therapy.

I have selected a few of my pictures, which I hope will demonstrate the difference in the response of face and eyelid epitheliomas to radium and x-ray; also other lesions of the face that have been incorrectly diagnosed, a mistake which naturally leads to errors of therapy.

1610 *Twentieth Street, Northwest.*

CASE OF SITUS TRANSVERSUS.*

By LAWRENCE T. ROYSTER, M. D., University, Va.

E. W., white American boy, seven years old, admitted to the University of Virginia Hospital December 30, 1924, with a diagnosis by the family physician of nephritis.

Family History: Father is well and healthy; is five feet three inches tall, and weighs 125 pounds. Mother is well and healthy. There is no family history of epilepsy, insanity, tuberculosis, dwarfs or deformities on father's or mother's side.

Pregnancies: 1. Girl, twelve years. Well and healthy and normal size.

2. Patient.
3. Miscarriage.
4. Miscarriage.

Past History: Gestation normal. Full term. Labor normal. Birth weight about nine pounds. Nursed one year, then cereals, bread, milk, butter, vegetables, cooked fruits, etc Was a normal infant. No mouth breathing or snuffles during infancy.

After age of two years he did not gain weight or grow normally, but was normal in other respects.

At age of four and one-half years, he began having epileptiform seizures, described by his mother as preceded by a day of drowsiness and malaise, then a sudden onset of unconsciousness and muscle spasm, when he often vomits, bites the tongue and passes urine and feces involuntarily. This lasts a few minutes, then he becomes relaxed and remains asleep for several hours. Seizures have been occurring about one

*From the Pediatric Department of the University of Virginia Hospital.

per month since onset. Since this time he has had frequency of urination and has to void about every hour during the day, and two or three times at night.

At age of six years, he had measles with no complications. There have been no other childhood diseases.

Present Illness: The onset dates from about December 23, 1924, one week before present admission, when puffiness about the face and eyes was noticed. There were no other symptoms, except frequency of urination as mentioned above.

Physical Examination: The patient is a small, nervous, alert, white boy, seven years old. He is very active and talkative and appears excited. There is no edema of face, feet or hands.

Height—33.5 inches (14.5 inches under average height for his age).

Weight 25.5 pounds (1 pound under average weight for his height).

Symphysis to vertex: 19.5 inches.

Symphysis to sole: 14 inches.

Circumference of head: 19 inches.

Circumference of chest: 19.5 inches.

Head: Somewhat square; brow and parietal bosses fairly prominent. Occipital skull somewhat irregular. Hair abundant, light brown.

Eyes normal. Ears normal. Nose normal. Mouth normal. Teeth sound. Tonsils enlarged, cryptic and anterior pillars adherent.

Neck: No rigidity, tenderness or enlarged glands.

Chest: Well developed, expansion equal. Slight rosary groove, and ribs flare. Lungs normal.

Heart: Apex 6.5 cms. to *right* of mid-sternal line. Cardiac dullness outlined as in photograph. Some respiratory arrhythmia. No murmurs. The intensity of the pulmonary second sound is greater than the aortic second.

Abdomen: Slightly above level of chest (with patient on back). No masses or tenderness.

Liver: Not palpated. Dullness from costal margin to seventh interspace in mid-axillary line, *left side.* (Outlined in photograph).

XUM

Genitalia normal. Anus normal. Spine normal. Skin normal.

Reflexes: Brudzinski's, Kernig's, contralateral, Babinski's, Gordon's and Oppenheim's are all absent. Cremasteric and abdominal are present. Patellar reflex not elicited.

Laboratory Findings: Urine is pale light yellow color, specific gravity 1010, acid reaction, no sugar, a large trace of albumin, a few hyaline casts and no pus or blood (twenty-four hour specimen used). Daily output varies from twelve to fifteen hundred c.c. The night specimen shows about one-half the amount of albumin as does the day specimen. Kidney function ('phthalein) 45 per cent in two hours. Hemoglobin 85 per cent (Dare). R. B. C. 4,420,000. W. B. C. 10,100. Wassermann negative. Stool examination negative.

Roentgenograms show transposition of heart and liver. After barium meal the stomach is transposed, and the vermiform appendix is on the left side.

The patient remained in this hospital for one week. During this time there was no evidence of epilepsy. His urinary albumin decreased to a slightest possible trace in the twenty-four hour specimen, and no cause could be found for his frequency of urination.

All roads should lead to Richmond for the fifty-sixth annual meeting of the Medical Society of Virginia, October 13-16.

VAGINAL ANUS WITH REPORT OF A CASE. OPERATION. CURED.*

By HENRY WISDOM CAVE, M. D., New York, New York.

Atresia Ani Vaginalis, Anus Vestibularis, Atresia Ani Hymenalis, Vaginal Anus and Vulval Anus are all one and the same congenital malposition of the anal opening. The term Vaginal Anus is the one most commonly used for this condition. As the name implies, it is a developmental defect in the termination of the rectum.

The vaginal anus abnormality is one of the commonest of all congenital defects of the anus and rectum, being rated as 40 per cent of a group of defects where the rectum may open into the urethra, bladder, uterus or vagina. It is generally acknowledged that some type of anorectal malformation occurs in about every five thousand births.

Collins[1] at the Rotunda Hospital in Edinburgh found only one case of vaginal anus in 16,000 obstetrical cases. Winckel[2] found only a single case of this condition in 12,000 babies at the Dresden Hospital. A large number of cases of this particular type of anal deformity go unrecognized on account of the fact that they are usually accompanied by congenital abnormalities such as atresia of the rectum or atresia elsewhere along the alimentary canal, especially in the first part of the esophagus when the patient dies in the first twenty-four hours

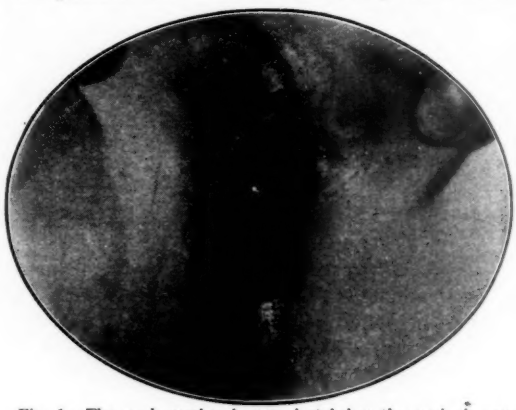


Fig. 1.—The anal opening is seen just below the vaginal opening where the labia majora fuse.

of life. A case of unrecognized vaginal anus is reported occasionally in the literature. Morgagni[3] reported the case of a woman who had an abnormal opening of the rectum in the vagina who lived to be one hundred years of

*Read before the Norfolk County Medical Society.

age, and who never knew of her congenital defect. Mondor and G. D'Allaine[4] recorded the case of a woman of twenty-five years of age with an anal opening at the fourchet who had no discomfort, and who had perfect sphincteric control. No operation was performed. Paschal[5] reported that a women with a vaginal anus gave birth to three children. She did not know of her defect, nor did her husband, nor did the accoucher who delivered her on the three occasions. This woman had an anal opening 2½ inches back in the posterior wall of the vagina which was somewhat obliquely placed and slightly to the right of the midline. This anal opening was surrounded by a well-developed sphincter.

There are various other cases found in the literature which have been cured and have resulted in a good sphincteric control following the operative measures taken. However common this condition may be, it seems worth while to report the following case as the only one occurring in the Surgical Services of the Roosevelt Hospital.

History: The patient who was a school girl of eight years of age was admitted to the Medical Service of the Roosevelt Hospital, April 16, 1924, on account of fecal incontinence with occasional nausea and vomiting. The patient had enjoyed general good health until she was three or four except for measles, scarlet fever, and whooping cough; from her fourth to her sixth year she suffered gastro-intestinal upsets with fever, joint pains, and also signs of valvular lesion of the heart. She had been troubled with bowel movements from infancy.

Family History: Her father, mother, and five brothers and sisters are living while three other children died in infancy. The patient was a full term pregnancy, and normally delivered. The patient was transferred from the Medical Service to the Surgical Service on account of a deformity of the anal opening on April 24, 1924.

Physical Examination: She was a well-developed and well-nourished white girl of eight years. Her heart and lungs were normal throughout; abdomen negative.

Surgical Condition: There was no anal opening at the normal site but in its place there was a deep depression of the perineal skin and underlying soft parts. The vulval cleft was normal to superficial examination. The clitoria, labia majora, urethral and vaginal openings were normal. In addition to this was the opening of the rectum, separated from that of the vagina by a corrugated septum apparently formed by the joined posterior ends of the labia majora. The hymen was intact. This misplaced opening of the

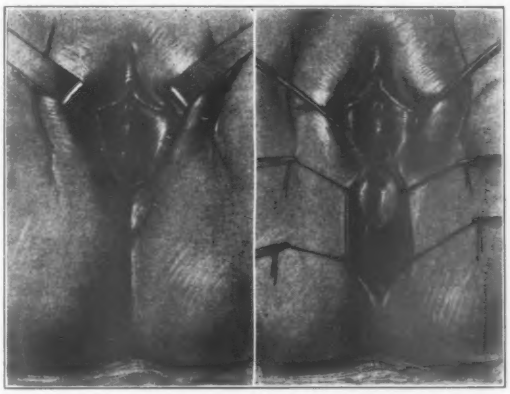


Fig. 2.—Incision into introitus of vagina circling vaginal anus and extending on back in midline of about region of coccyx.
Fig. 3.—Incision retracted and lower three inches of rectum exposed.

rectum admitted the tip of the little finger. It was more of a transverse slit than a rounded, puckered, anal opening. It was deemed advisable to do a plastic operation on this child's perineum in order to move this deformed rectum backward into its proper position. Therefore on April 30, 1924, the operation was done under drop ether anaesthesia.

Operative Procedure: The patient was placed in the lithotomy position. An incision was begun in the introitus of the vagina going well around and downward to either side of the misplaced anus and extending further down in the midline of the perineum to the region of the tip of the coccyx. The anus was, with great care, dissected from its position in the vagina, extreme precaution being taken to preserve the blood supply of the lower rectum which had to be mobilized. The borders of the levator ani muscles were thoroughly identified and the anus and terminal three inches of rectum were brought downward and backward and the anus sutured with interrupted fine silk to the skin. There seemed to be, in this region toward the coccyx, a rounded muscle superficial to the levator ani muscles which gave one the impression of a poorly developed sphincter ani muscle. With great care this rudimentary sphincter was sutured around the

XUM

terminal half inch of the rectum with interrupted sutures of fine chromic catgut. The levators were also sutured together around the lower portion of the terminal rectum in order to be sure that the rectum would have a sphincter action from the levators in case the rudimentary sphincter ani muscle did not properly function. The perineum was carefully built up over the new placed rectum and the vagina sutured. A small rubber tissue drain was placed in the lower portion of the

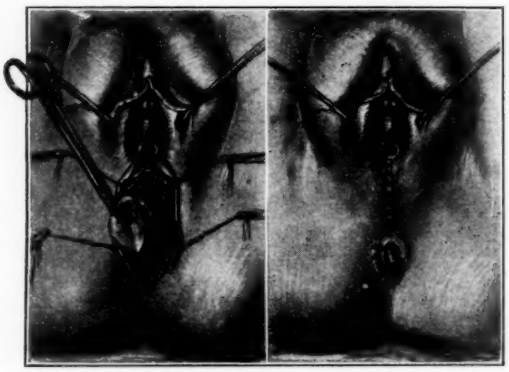


Fig. 4.—Anal opening with surrounding skin clamped and brought posteriorly to fit into sphincter muscle fibres which are seen at lower angle of wound.
Fig. 5.—Operation completed with tube in rectum, the anal opening having been moved posteriorly about three inches and perineum built up between vaginal opening and rectum.

perineum just anterior to the rectum. There was practically no tension exerted on the mobilized rectum as it was brought down and sutured into its new position. In fact, there seemed to be a redundancy of the rectum so that we did not anticipate that it would retract and pull upward as the healing took place. The operation was well borne.

Post-Operative Course: The child made an uneventful recovery, its temperature not going higher than 101°. It had to be catheterized the second day after the operation. There persisted a fecal incontinence up to her twenty-fourth day. At this time the child got up out of bed and was allowed to walk around, and she called for the bedpan or went to the toilet whenever she felt her bowels wanted to move. The wound healed very satisfactorily.

X-ray Report: June 10, 1924. Forty-one days following the operation, X-rays of the rectum and large bowel were made. After an injection of barium enema, plates were made to demonstrate the pelvis colon which showed a long narrow channel just proximal to the sphincter with a pouching or dilatation of the lower sigmoid which was apparently compensating as a rectal pouch.

X-ray Report: November 24, 1924. The films showed a moderately dilated rectum normally located. There was a slight dilatation of the sigmoid. Ascending, transverse, and descending colons showed no evidence of dilatations and there was good muscular tone shown throughout the colon.

Late Report: November 24, 1924. Perfect

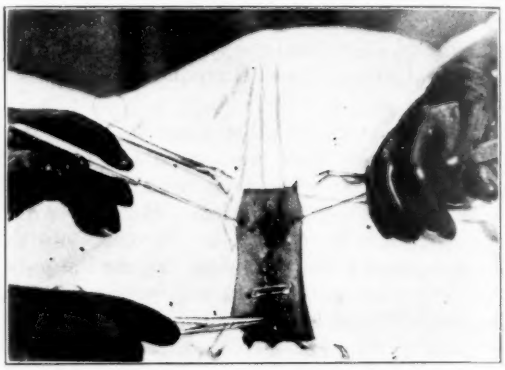


Fig. 6.—Actual photographs taken in the operating room at the completion of the operation.

control over every defecation.

Pathogenesis: It is in the early stage of fetal development that this rectal and anal abnormality occurs.

Pathology: Brenner[6] collected ten cases of vaginal anus, four of these being successfully operated upon and six were not operated upon. A perfectly formed sphincteric muscle, in some cases surrounds the anus in its misplaced position in the vagina or a psuedo-sphincteric action results by serrated conformation of the vaginal mucous membrane surrounding the opening. In this latter type of case, a normal sphincter muscle usually undergoes atrophy from disuse if the child is not operated upon during the first three or four years of life. The atrophying sphincter remains in its normal position superficial to the levator ani muscle in the region of the coccyx. In cases where there is a slit-like or partially occluded anus in the vagina, there may be a distinct narrowing of the adjoining rectum which resembles a stricture and it may possess also a pseudo-sphincteric action giving to the fecal movement a certain amount of control. There are a certain number of cases, but they are ex-

ceedingly rare, where the bowel empties directly into the uterus without the presence of rectum or anus. There are also certain groups where there are openings which are present in the sacral region or in certain parts

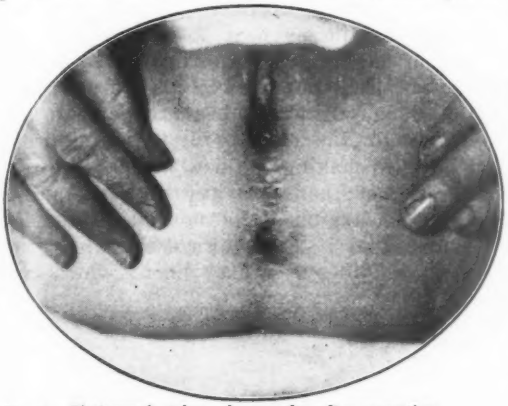


Fig. 7.—Photograph taken six months after operation.

of the perineum which adjoin to the rectum by fistulous tracts. The rectum is usually placed high up in such cases.

Symptoms: If the anal opening in the vagina is a large one, no symptoms are complained of until the child is at an age when it should have control over the bowel movements. If there is no sphincteric muscle surrounding the misplaced anus or if there is no pseudo-sphincteric control, then incontinence is the chief symptom. If there is control of this large opening and no symptoms of obstruction, conception can take place and long life ensue. When the opening is small and slit-like, the first symptoms are those of obstruction. The obstructive signs appear at the time when the feces change from fluid to a solid consistency. The obstructive symptoms gradually increase. A symptom producing tight opening has been benefited by dilatation with fine bougies until the patient has reached a proper age for operation. If there is also a connection between the bladder and rectum as well as a vaginal anus, the symptoms of cystitis and an ascending infection into the kidney may be complained of.

The anal opening may be at the edge of the vagina in the posterior midline or either to the right or to the left side of the midline well back, emptying through the posterior wall of the vagina. The opening itself may be circular in character and of good dimension. It is in this type of opening that fecal incontinence results. The opening may be slit-like in character. The opening may be long or very short. It is this contracted type of opening wherein obstruction to the normal flow of fecal matter is produced and subsequent distention of the large bowel, nausea and vomiting ensue. The anal malformation is accompanied, as a rule, by malposition of the rectum.

Prognosis: If the operation is performed when obstruction has not developed and a sphincter is either already around the terminal rectum or when it is found in the region of the coccyx and is utilized, a good result is usually always assured within six months to a year. If no definite sphincteric fibers have been found and the levator fibers are utilized, a year to a year and a half may elapse before any normally controlled movements occur. For the most part, the prognosis in all of these

Fig. 8.—Barium enema photograph of rectum and large bowel taken forty-one days following operation, showing pouching of lower sigmoid, which is compensating as rectal pouch.

cases operated upon is good. There is but little shock attending the operation if it is done with great care and all small bleeding vessels attended to. If there is a complicating opening into the urethra or bladder, the anal opening into the vagina, and the patient's resistance is

low due to the presence of cystitis or an ascending kidney infection, the prognosis is not good.

Treatment: The treatment of vaginal anus is for the most part relatively simple. It does not entail complicated operative measures when the opening is in the fourchet. But, if the opening is to either side of the midline or well back in the vagina, it is difficult from a technical standpoint. There are certain principles involved which should not be lost sight of in performing operations on these congenital abnormalities. In the first place, if obstructive symptoms supervene, immediate relief should be given to relieve intestinal tension and also to establish an opening sufficient for an easier passage of the movement by removing the obstruction. If possible, at the same time, it is well to bear in mind that the misplaced anal opening should be moved and placed in the perineum where it is more convenient to the act of defecation. A guiding principle for any operation of this condition is to let the new outlet have complete control to the extent that defecation is voluntary rather than involuntary. Considering any plan of attack, it is well to realize that whatever is done is to be permanent, and that the new opening will not contract to a point of marked constriction as time goes on. Proctoplasty's most favorable time is about the age of nine or ten after the parts have become fairly well-developed and menstruation has not begun. Up until this time dilatation of the partially occluded vaginal anus is sufficient. It is thought by some that children with congenital abnormalities do not stand operations well. However, this does not seem to be the case unless there is a sepsis present. Severe traumatism in children does not produce more shock than it does in adults and a light drop ether is safest. The parts may be cleaned with soap and water, bichlorid, or 3½ per cent iodine. It is well to have had the knowledge of X-ray examinations of the termination and size of the rectum before operation is undertaken. A plug of gauze may be inserted in the anal opening which is usually cleaned by enema and this plug is sewed into the opening with two mattress sutures of silk, to the anal margin, in order to prevent soiling. An incision is made into the introitus of the vagina ¼ inch or preferably ½ inch from the anal margin and if the sphincter muscle is present it should be left intact surrounding the anus and the incision well outside the border of the muscle. The incision is carried around the anus and backward in the midline to the region of the tip of the coccyx. The anus and terminal two or three inches of the rectum are freed carefully and brought well backward to lie as near as possible to the coccyx in the midline. An important point to remember, is to put the rectum far back for, as the tissue contracts, it has a tendency to tilt forward into the vagina. It is well to note carefully, in making the new bed for the rectum, whether there are any circular muscle fibers in the region of the normal position of the anus; that is, back toward the tip of the coccyx. If these circular fibers which are

Fig. 9.—Barium enema photograph, taken six months, three weeks, following operation, showing a slightly dilated rectum and sigmoid. Good muscle tone shown throughout colon.

really sphincter muscle fibers are left, they may be utilized to form a sphincter for the rectum and assurance of ultimate control. The margin of the anus is sutured to the skin with uninterrupted sutures of fine black silk. The new sphincter fibers are sutured about the terminal half inch of the rectum with fine chromic sutures. Following this the edges of the levator ani muscles are identified and are brought together with chromic catgut as is done in any classical perineoplasty. The peri-

neum is gradually and carefully built up between the vagina and new placed anal opening of the rectum. The suture of the opening in the vagina is done also. A small wrapped rubber tube covered with vaseline is inserted into the rectum. A small tissue drain is placed in the posterior angle of the wound near the region of the coccyx to be removed after twenty-four to thirty-six hours. If the anal opening is to either side of the midline and well back in the posterior wall of the vagina, greater care has to be taken: the operation is more technically difficult, but the same procedure as just described is found satisfactory. If there are complicating fistulous tracts which run from the rectum high up into the bladder or into the urethra, they should be treated at the same time as is ordinarily done for urethro-rectal or vesico-rectal fistulas. The patient should be placed on a contipating diet for seven or eight days: on the seventh night post-operatively, an oil should be given by mouth and on the following morning an oil enema should be given to insure the patient of a fairly comfortable bowel movement. The new placed anal margin should be sponged each day and care should be taken that there is no cutting through of any of the sutures. These cuts through sutures make lasting scars in the perineum. After two months' time it is explained to the patients that they must assist in controlling bowel movements. If regular habits are insisted upon, good results may be expected even if no sphincter muscle is present around the anus or is found in the coccyx region: for, if the levator ani muscle is carefully sewn, it sometimes develops a sphincteric action around the rectum and control is the result.

Summary

1. Vaginal anus is one of the commonest of malformations of the rectum and anus. It has been estimated that it occurs in one case out of every 10,000 births.

2. Vaginal anus is due to embryological disturbances of the terminal large bowel during development. The defect begins during the first two months of fetal life.

3. A tight constricted or slit-like vaginal anus often produces distention of the bowel with occasional signs of obstruction. A loose vaginal anus without sphincter muscle about terminal one-half inch of rectum usually gives incontinence. The proper age for an operation of this kind is about eight to twelve years.

4. The basic principles for this operation ensure (a) an easy and painless outlet for feces, (b) good sphincteric control, (c) and position of outlet well back in region of coccyx in midline of perineum.

5. The operative mortality is low and prognosis is good, especially if sphincter muscle is either already around anal opening or is found in region of coccyx.

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HYSTERECTOMY.

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The title of this paper was purposely made vague because it is designed to discuss various questions connected with the subject which can not be grouped except under a very general term. Hysterectomy belongs to the type of operations which might be described as destructive surgery. With such an idea in mind it would be regarded as a thing to be avoided and only to be done as a last resort. However, when it is judiciously employed, it enables us to restore to normal health various groups of cases, and when considered from this aspect it may be regarded as constructive surgery.

Some of the more important pathological conditions in which hysterectomy has to be considered follow:

Cancer of the cervix uteri. The development in the treatment of this condition is quite interesting. It was formerly regarded as one very favorable for surgical treatment, because the uterus was an organ that could be completely removed and therefore its complete removal should have resulted in a cure. It was found, however, that recurrences following operations were very high, and the statement was finally even made that no case of cancer of the cervix had ever been permanently cured by operation. The reason for this re-

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currence lies largely in anatomical relations that exist at the cervix. The cervix is suspended by the base of the broad ligament which contains the blood vessels and lymphatics. Extension of cancer occurs along this channel. In performing an ordinary hysterectomy, the point of dissection when the cervix is reached is immediately against the cervix, to avoid injuring important structures, particularly the ureters. When we come so close to the cervix we cut directly through the danger zone and consequently do not make that wide dissection that is indicated in cancer. To avoid this, Wertheim developed the operation that goes by his name, and which consists in removing not only the uterus and adnexa, but in making a wide dissection of the pelvis and removing all of the connective and lymphatic tissue. This operation is theoretically an excellent one, but owing to technical difficulties, the length of time consumed in the operation and the high primary mortality, the operation has never been generally adopted. For the reasons stated, therefore, treatment of cancer of the cervix by operation alone has been rather disappointing.

When we come to consider *cancer of fundus uteri*, we have quite a different proposition to deal with. The cancer being situated some distance from the danger zone in the base of the broad ligament, the removal of the uterus removes the cancer entirely, and in these cases permanent cure results in about 75 per cent. Operation therefore, is undoubtedly the treatment of selection for cancer of the fundus.

In *fibroids of the uterus*, a number of questions present themselves. Owing to the fact that the fibroid tumor is encapsulated and does not invade the uterine structure, it would appear theoretically that myomectomy could be used with a fair degree of frequency, thus preserving the generative organs entire. We are confronted, however, by the disquieting fact that fibroids are essentially multiple tumors, and where one is found we know that the chances are that other minute ones exist even though we may not be able to detect them. It therefore frequently happens that, after a case has been operated by a myomectomy and apparently a very good result has been secured, after an interval of several years the patient finds that another tumor has developed which is giving as much or more trouble than the original tumor. This is a matter of such frequent occurrence that the desirability of doing a myomectomy at all can be seriously questioned. However, in young women and those particularly anxious to have children, the patient may be willing to incur the risk of subsequent operation rather than to have her organs sacrificed. In the majority of cases of fibroids, it will happen, however, that the distortion of the uterus is so great and the fibroid nodules so numerous that no other operation other than the hysterectomy can be considered.

We have to consider next *chronic pelvic conditions* which occur at or about the menopause. Where such conditions occur in women who are about to have the change of life, they have usually existed for such a long period of time that conservative work is not likely to restore the parts to normal. This is particularly true when we have associated with other conditions the enlarged and boggy uterus which has a tendency to bleed. These cases undoubtedly secure a better result from hysterectomy than from attempts to restore the organs.

We will lastly mention that type of cases which I refer to as *cases of pelvic unbalance*, which apparently are of endocrine origin and which, without distinct pathology, present two striking symptoms, severe painful menstruation and irregularity of menstruation, often with a tendency to hemorrhage. Sometimes such cases are markedly benefited by glandular therapy, but in others they remain rebellious to treatment, whatever may be done. Where this condition has existed over a number of years without benefit from conservative methods of treatment, very remarkable results often follow the ablation of the pelvic organs.

The next general point which I wish to discuss is the effect of hysterectomy on the general well-being of the patient. This subject is one that we should approach with an open mind. I remember quite distinctly that when I performed my first hysterectomies in cases in which they could not be avoided, that I warned my patients of the dire consequences and disagreeable symptoms that would follow the operation, but consoled them with the fact that they would only be temporary. I was very much surprised when I discovered that many of them instead of developing the vicious train of symptoms that I expected, began immediately to improve in health and expressed themselves as feeling better in every way than

they had before the operation. There always occur, of course, the steams and flushes that are incident to the change of life, whether natural or induced.

There are two things which I think must always be considered when we contemplate a hysterectomy. One is the age and experience of the patient; the other, the effect of the ovarian secretion when the uterus has been removed. I think that we should always avoid, if possible mutilating operation in young women, particularly if unmarried. Even if no ill effect followed the operation, the psychic effect of knowing that they are different from other women would certainly have a bad influence. When, however, the woman has been married and had children and is approaching the time when she would have the change of life anyway, we can discuss the case quite philosophically because we have only to consider how best to deal with the pathological conditions present. In other words, after the sexual life of the woman has been satisfied, the induction of the menopause is not followed by untoward symptoms as a rule. This is particularly true if there have existed conditions in the pelvis that have seriously impaired the woman's health, either by pain, bleeding or absorption from a chronic inflammatory condition. Such cases derive so much benefit from the removal of the pathology that the minor symptoms of the menopause are scarcely noted. I have frequently observed such cases who seem to renew their youth following a hysterectomy.

The other point is, what shall we do with the ovaries? Should they be removed with the uterus, or left? Without going too fully into the discussion of this question, I would say that in my experience the best results are secured by removing the ovaries, if the uterus is taken out. If we consider the function of the ovaries, they are, in the first place, trophic, in the second, they secrete ova, and, in the third, they are supposed to have something to do with the sexual instinct. There is also a good deal said about the internal secretion.

We do not have to consider the trophic function in women whose development is complete. Secretion of ova is of no avail after the uterus has been removed. I am not satisfied that the ovaries have a great deal to do with the sexual instinct, and I don't think that is very strong in the majority of women. I do believe, however, that there is a very definite balance between the function of the ovary and menstruation, the two making a complete cycle. If menstruation is stopped, we have a broken cycle, and under these circumstances the ovaries are more liable to cause disturbance if left than if they are removed. In addition to this, when the ovaries are marooned and not connected with the uterus, they are certainly more liable to undergo degeneration and cause subsequent trouble. I believe that in the majority of cases better results will be secured if the ovaries are removed with the uterus.

The question also arises: Should the cervix be removed with the uterus or left in? I think that the cervix should be removed with the uterus unless the difficulties of its removal are so great as to make the operation hazardous. The technique which I have employed has proven very simple and very satisfactory, but it is not the purpose of this paper to go into technical details.

We have also to consider the prophylactic advantages of hysterectomy in reference to cancer. It has been well established that various pathological conditions in the uterus predispose to malignancy. The lacerated and indurated cervix is certainly more liable to develop carcinoma than the normal cervix, and I believe that cancer is more likely to develop in the fundus of the uterus that is pathological than in the normal uterus. Therefore when we remove the uterus on account of pathology, we are not only removing a diseased organ, but to an extent preventing the woman from developing cancer.

This discussion could not be complete without reference to the result secured in the treatment of cancer and fibroids by radiation, this term embracing the effect both of radium and X-ray exposure. I am too familar with the good result of this method of treatment, and too enthusiastic over what has been done, to attempt in any way to discredit it. I have felt for some time, however, and have had cases that have borne out my view, that the best results will be secured in cancer of the cervix by combining operation with radiation. Operation is to be undertaken, however, only in the early cases and never attempted after the disease has extended beyond the cervix. If the uterus with the cervix is removed, and the stump treated by radium or X-ray, I believe that we will get the best result. It is more difficult, I am sure, to eradicate the cancer at

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its original site than it is to take care of the first cells of invasion. I find that this view is upheld in a recent editorial by William J. Mayo, M. D.

In reference to the treatment of fibroids by radiation, it is undoubtedly true that in selected cases the results secured are very excellent, both as regards the diminution in size of the tumor and the control of bleeding in cases which have this tendency. However, in the very large fibroids and in those which have accompanying pathological conditions that would require operation anyway, it would hardly seem necessary to do both, when an operation only is necessary. I am quite satisfied that as our experience increases we will find that the treatment of fibroids by radiation will only be indicated in a comparatively small group of cases.

Referring to the general subject of hysterectomy, we are forced to conclude that it is an operation of wide applicability; that when done in properly selected cases it will relieve the patient more certainly and permanently than any other treatment; that when it results in restoring the patient to a normal condition of health, so that she may participate in and enjoy the activities of life, it is a constructive procedure; and that as far as our experience has gone at the present time, it is the very best way of dealing with large groups of cases that are daily presenting themselves.

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SOME REMARKS ON DENTAL SEPSIS, WITH ESPECIAL REFERENCE TO CROWN AND BRIDGE WORK.

By CLARENCE PORTER JONES, M. D., F. A. C. S.,
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Dental sepsis is a child of civilization, yet one of its greatest handicaps. Its consideration and proper treatment overshadow every other subject in connection with the art of healing.

Thoma[1] divides the effects of septic teeth on other parts of the body into those which discharge free pus in the mouth and those in which the pus is taken away by direct extension, through the blood stream and lymph stream.

Pus discharged in the mouth bathes the tissues therein, tonsils, and pharynx, and is constantly swallowed. Such a condition needs but to be visualized to comprehend its dire possibilities. It is a known fact that the swallowing of pus over a period of time causes the gastric juice to lose much of its acidity, thus allowing pus to pass on to the intestines where gall-bladder, appendix, and what not are exposed to a continuous source of danger. By direct extension the antrum is infected through its floor. We believe over half of the nasal sinus infections are ascending; that antrum, ethmoid, frontal and sphenoid become infected in the order named. The position of the head while asleep, as mentioned by Dutrow,[2] favors invasion of the other sinuses from the antrum. In substantiation of this statement, we all see cases of pan sinusitis which get well rapidly upon removing the dental source and establishing free drainage and aeration of the antrum. Finding the teeth all healthy one rarely sees chronic antritis. The most frequent offender in our observation is the first molar tooth, though other teeth may be the inciting cause. We, as a rule, cannot cure our chronic antrums till the dental error is corrected, another fact which supports the acendening theory. Were the antrum a cavity favorable to drainage and aeration the dental correction would usually be all that would be required.

Skillern[3] says, "The infection may start as a chronic disease as, for instance, in maxillary empyema of dental origin, where the continued slight infection from the minute fistula in the carious tooth slowly and gradually spreads out into the floor of the antrum, until finally the entire cavity is involved. The process, from its very inception, has been essentially of a slow and chronic nature, at least as far as the symptoms were concerned."

The more important consideration is those cases where the infection is taken away by the blood stream and lymph stream. Depression, physical and mental, easy fatigue, diminished power of concentration, sleepiness, loss of weight and toxemia result. In fact, there is no end to the train of symptoms. Every physician and dentist is aware of Rosenow's work in the study of nephritis caused by dental sepsis. Really, the possibilities of harm done by pus let loose in the blood stream are unlimited.

So much for a survey of the subject of dental sepsis. We now come to the consideration of crown and bridge work. Being ignorant of dental terms, we therefore speak in our own

language. We give the following reasons why crowns add to the difficulty:

1. Crowning an infected root is like building a house on a faulty foundation.

2. Working on an infected root causes irritation and thereby increases the infection.

3. The crown gives the root more work to do, which means an enlarged infected area.

4. Building an infected root up with a crown puts more pressure on the root and the infected area, causing pus to go directly into the blood stream.

5. A patient having paid a more or less expensive sum to have a root crowned, later discovering it to be infected, will hesitate the more to have it extracted, although he knows it is infected.

6. Crowning infected roots is simply making more work for dentists and physicians who recognize the importance of oral infection.

In addition, the following may be said of bridges:

1. There is difficulty in cleaning all recesses and nooks.

2. The swinging or "swayback" bridge irritates the gums, often causing a "sea" of pus.

3. The insecure or "rocking" bridge, for obvious reasons, is unsanitary.

We wish emphatically to protest against the habit among some dentists of putting gold crowns on healthy teeth for gaudy show, demanded by foolish people, which is a source of pride to them like the tattoo on the feeble-minded sailor. The latter does no harm; the former is fraught with danger by cutting off air from the tooth surface, harboring infection, and by its edges irritating and often infecting the gums. Money made by this pernicious practice will choke the conscience in the declining years of life like the gambler's ill-gotten gain. The plea that "if I don't, some one else will" is shopworn. It was formerly used by the bartender to justify himself in selling liquor to the moral weakling.

Our case records illustrate many of the various phases of crown and bridge sepsis. That it aggravates other infection is clearly proven by the following:

Mr. H., 52 years old, had syphilitic iritis (positive Wassermann), severe pain day and night. Atropine three per cent, failed to dilate the pupils; iris was fused to the lens capsule as it were. This continued for twelve days, till extraction of two crowned teeth caused a rapid dilatation of the iris, with complete relief from pain.

Mrs. R., 40 years old, a diabetic, had a troubulous corneal ulcer, which refused to heal, in spite of three weeks' treatment. The removal of a septic broken bridge caused rapid healing of the ulcer.

Mrs. C., 46 years old, chronic tuberculosis, suffered from severe facial neuralgia for many weeks, received instant relief after removing a swayback bridge.

These cases also show the injustice which it would be possible to show the sufferer from syphilis, tuberculosis, diabetes, etc., by shrugging our shoulders, without looking further for the source which may be doing the greatest harm for the time being at least.

That blindness can be caused, the following will illustrate:

Mr. C., mechanic, 39 years old, noticed his left eye blind. He could scarcely count fingers. He immediately reported for examination. The ophthalmoscope revealed no pathology. Removal of two bridges which were in contact with gums covered with granulation tissue caused a return of vision in four days. This occurred three years ago. There has been no return of blindness.

Mrs. M., 52 years old, noticed "butterflies" before her left eye, also very little vision, 10/200. Extraction of a crowned canine tooth on the same side caused the "butterflies" to disappear and the vision to be normal in five weeks. This tooth was painful at times for some months before. It was crowned just twenty days before she noticed the condition. The roentgenogram revealed a granuloma at its apex.

Otalgia from dental causes is so prevalent that we confidently expect to find a septic tooth, often a crowned tooth, in every case where there are no objective ear symptoms. Cases of this nature, we have had by the hundreds.

Rheumatism and arthritis caused by dental sepsis are so familiar to every physician and dentist they need be mentioned merely in passing. One very spectacular case we will cite.

Mrs. C., 23 years old, had severe arthritic pains in both wrists in 1903. Removal of a long crown over a molar tooth which tightly impinged the gums caused a magic cure. Three years later severe pains in right shoulder, coming on about two A. M., lasting till the

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middle of the afternoon, were relieved upon removing a badly fitting bridge from the same side, lower jaw.

In 1911 she had lumbago, which disappeared upon the extraction of a crowned tooth. In 1922 she had a bridge put back, swinging from the same teeth which supported the badly fitting bridge removed in 1906. In a month she became sick from gall-bladder infection and various attacks of rheumatism; in fact, she was an invalid for more than a year. She had moved and was now the patient of a severely conservative dentist who made every endeavor for her retention of the "pretty bridge." But the bridge was finally removed and both teeth extracted. In two weeks she was well and is at this time quite free from any symptoms. She is not at all enthusiastic about handsome crowns and bridges.

Extreme mental and physical depression is often an outstanding symptom of dental sepsis, aggravated always if the offending tooth be crowned.

We have more than a score of such cases among our records. For the sake of brevity, we will mention two:

T. B., 59 years old, a laborer. About two years ago began to have a spell of mental and physical depression each afternoon, with a feeling that something was going to happen to his family. This depression was attended for a short period of time by a feebleness that prevented his ascending the stairs unassisted. The roentgenograms revealed cloudy antrums and four infected teeth, all having been crowned for "gaudy show" some fifteen years previously. The antrums were opened and found to contain a mucous fluid. No improvement followed treatment. The urine contained albumin over twenty per cent by volume. Extraction of the teeth was followed the next day by deep coma, which lasted for thirty-six hours, then recovery, the urine being albumin free in four weeks. He has continued well.

Mrs. C., 37 years old. Had mental and physical depression, coming on early each morning and lasting well into the day. A thorough physical examination failed to disclose anything except a swayback bridge, which was buried into the gums. Nothing was done for her except the removal of this bridge. There was a prompt cessation of these spells. Six months have passed. Since the removal of the bridge, she has continued well.

We think there is no further need to mention other cases, but we will say that we are not in a position to decide just what teeth should be crowned. We content ourselves by asserting that it is our soul's deepest conviction, that no tooth with an infected root should be crowned. We feel that the dentist should exhaust all means of diagnosis, together with a thorough X-ray study, when there is the slightest doubt in the premises, before a crown is put on any tooth, and no swayback, rocking or insecure bridge should be put on any tooth.

Having been misunderstood by our fellow physicians and dentists for our persistence, yet we feel that if we have done anything, however small, to protest against the hundreds and thousands of sudden deaths during the middle period of life, which were indirectly caused by dental sepsis, if we can do a small bit to hasten the day when physicians and dentists will think more clearly on prevention of oral sepsis, and at least give as much thought to this vital question as they give to golf and sports, our labors and agitation will not have been in vain.

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3117 *West Avenue.*

SOME SOLVED AND UNSOLVED PROBLEMS OF INTERNAL MEDICINE.*

By ALEXANDER G. BROWN, Jr., M. D., Richmond, Va.

It is a privilege to speak to this companion group of specialists on "some solved and unsolved problems of internal medicine." The privilege is appreciated. The opportunity, which one medical group gives another, to hear of the problems peculiar to its own, but necessarily directly or indirectly related to other fields, is a privilege fraught with a mutual benefit. In attempting to present some of the problems of internal medicine to you I shall take great liberty with fact and scientific discussion. For I conceive the benefits of such an opportunity as I enjoy tonight, in speaking to you, to lie in popularized presentation of our problems (solved and unsolved in internal medicine) rather than a highly technical dis-

*Read by invitation before the Richmond Dental Society.

cussion. So I shall endeavor to avoid highly technical phrases of discussion in medicine. Were you presenting to internists the problems of your specialized work the same method of communication would be appreciated. So, many of my comments may be opened to some question when the term "solved problems" is applied. Problems of disease are really difficult of solution. So when we use this term we speak relatively.

For generations on end scientific medicine made few advances. Through the ages disease spread its direful blight over the human race. Races of men and nations of the earth met untimely death through the ravages of contagious diseases. Epidemic after epidemic spent itself in the human family, through the generations of men, unimpeded, unsolved, unstudied. Millions of men, women and children suffered and died as a result of the unsolved problems of infectious diseases. Contagious diseases, unopposed, except by the natural laws of resistance and immunity, inherent as the laws of physical world, ravaged man through the centuries, increasing, doubtless, their ferocity and devastation as civilizing tendency to community life increased.

It was only in the 18th century, long years after, that epochal victories were achieved against these hosts of the invisible world of disease.

Now, as solved problems in medicine are well illustrated by this group of world-wide and history-worn diseases, we may, for a moment, cite in detail a few that appear to be "solved" from the standpoint of prevention, if not cure. I call your attention to smallpox, dipththeria, typhoid fever, and, now, scarlet fever. These serve as prominent illustrations of the greatness and power of the forces of modern scientific medicine.

To smallpox, then, we may for a moment briefly point in detail. Smallpox was first described by an Arabian physician, Rhazes, in the 9th century, but it is believed that it was recognized and described as a disease by Galen as early as 130-200 A. D. under the term pesta magna. For centuries before Christ such a disease prevailed in China in epidemic form. In the 6th century it prevailed in very devastating form. Bernouilli states that in the 18th century sixty million people died of smallpox in Europe. In Russia, at the time that Disdale went from England to inoculate Empress Catherine, 2,000,000 deaths occurred in that epidemic. In 1707 an epidemic in Iceland resulted in 18,000 deaths out of a population of 50,000 inhabitants. In 1796 Junaker said that 400,000 lives were lost yearly in Europe by smallpox. The disease entered America by Mexico through Spaniards in 1520 and has been observed in various epidemics on this continent since that time. At the age of nineteen years, George Washington, forty-five years before the discovery of a preventive by a medical man, contracted smallpox when on a visit to his brother Lawrence in the Barbadoes. During the civil war there were recorded 4,914 deaths from smallpox. In the early seventies, and at various times since, smallpox has appeared with more or less freqeuency and virulence.

The epochal step in the solution of this great internal medical problem was taken when Dr. Edward Jenner, on May 14, 1796, vaccinated the boy, James Phipps, with matter from kine pock, from the hand of a dairy maid, Sarah Nelms, and on July 1 introduced into this boy pus from a smallpox pustule without effect (Tyson). In June, 1798, Dr. Jenner published a paper: "An Inquiry into the Causes and Effects of the Variolae Vaccinae." Within two years vaccination became general over the continent. On July 8, 1800, Dr. Ben Waterhouse, Professor of Physics at Harvard University, vaccinated his own children. President Thomas Jefferson encouraged its use in the United States. In spite of the first step in solving this great human medical problem by vaccination, there remains the unsolved problem of its etiology. But we wish to affirm that vaccination for the prevention of smallpox, which has menaced the human race through the ages, is one of the solved problems in preventive medicine. Smallpox today in any civilized country is a disgrace, although our own country in the northwest and the far west, still records an high incidence of the disease.

Diphtheria, an acute contagious inflammation of the mucous membrane (or skin), usually oral, faucial, nasal, laryngeal, trachceal or bronchial, due to implantation and proliferation of Klebs-Loeffler bacillus, has prevailed, endemically and epidemically, in the human family since the days of Hippocrates in 406 B. C. A disease, however, resembling it was described by an East Indian physician, Dr. Hanvanture, about 500 B. C. A century

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before Christ, Asclepiades performed the first trachectomy for the relief of a patient suffering with diphtheria.

Aretaeus (100 A. D.) in 1st century and Galen in 2nd century left descriptions of the disease. The disease appeared in America in the 17th century. In 1771 there was widespread epidemic in New York. From that time epidemic on epidemic has occurred in this country. Widespread devastation was wrought in children until the introduction of the well known diphtheria antitoxin. This potent remedy, when injected early in the disease, quickly brought the appalling mortality to almost nil.

For the past twenty years or more, this remarkable agent has been accessible and has been applied everywhere. To this achievement has now, within a few years, been added the "Schick Test." Then, comes the immunizing toxin-antitoxin.

These scientific discoveries (the antitoxin, the Schick test and toxin-antitoxin) place diphtheria in the catalogue of diseases of which the problem has been solved.

Again, typhoid fever, an acute infectious disease, due to the implantation and proliferation of the bacillus of Eberth, is coeval, probably, with civilization itself. It has been described in terms easily recognized by Hippocrates (B. C. 460-357) and Galen (A. D. 130-200). On down the centuries innumerable writers have discussed the cause, course, incidenc and treatment of this ubiquitous disease of man. The long toll of death that its contagion has wrought in the human race is incalculable. The knowledge of its mode of propagation and the discovery of a vaccine have about wiped the dread disease from the face of the earth, in any large proportion. Whereas in the ranks of armies and camps, typhoid fever was always a menace and deadly probability, now hygienic measures, followed in the care of food and drink, and the application of compulsory typhoid vaccination by hypodermic injection of killed bacilli in measured amounts at stated intervals, has all but eradicated this disease. This may be said to be another great feat in medicine; this accomplishment is a solution of the disease problem.

To this I must add another example. The last, to which I shall point, comes as of yesterday. You may say it is not a fair example. If not, before I mention it, I shall, to make the original point a bit stronger say that yellow fever epidemics are no more, because of Walter Reed and his co-worker; that malaria is under control; that pulmonary tuberculosis is fast falling in the mortality column.

But the last great medical disease that is all but solved is scarlet fever. Here internal medicine enters the lists against the invincible and malignant streptococcus.

Stalking with its red flag of death among the children of the world, scarlet fever has baffled scientists of all ages. Despite modern knowledge of hygiene and sanitation, its direful trail of complications of deafness, blindness, rheumatism, heart and kidney disease is found among the children of the world today. So, from the pestilence of Thebes in 600 B. C. and the plague of Athens in 430 B. C. down to the 17th century, when Sydenham described its classical symptoms, as we recognize it today, in the old world everywhere and in epidemic form in this country now, scarlet fever, with more or less mortality, but with fearful sequelae, has continued to afflict childhood and has up to yesterday withstood every attempt to discover its etiologic factor or its successful treatment. It seems scarcely possible that it can be the good fortune of our generation to witness another astounding accomplishment of medical science. But it is true that through the indefatigable and indomitable scientific work of Drs. George and Gladys Dick (his wife), almost singlehanded, the "Dick test" for scarlet fever was evolved, after essaying innumerable experiments in the baffling domain of streptococcus immunity. The story of this remarkable "look in" upon this redoubtable germ and its subtle presence in the human, is full of dramatic interest. The field to which the Dicks bent their efforts was a "no man's land" in science; although for several generations scientific workers have been making numerous efforts to discover the secrets of this disease-organism, it remained for the Dicks to discover the identity of the hemolytic streptococcus as the cause of scarlet fever. Following this, a long chapter of self-sacrifice and scientific effort was necessary to produce scarlet fever experimentally. This was accomplished by them in October, 1923. Having accomplished this, the next step followed. The Dick test was evolved. With this highly diluted

toxin injected between the layers of the skin, it was found to be possible to determine whether or not the person so injected was susceptible to the disease. Susceptible children can be found out by the Dick test and by the Dick antitoxin be immunized. And now comes the announcement from a reliable firm that the scarlet fever streptococcus antitoxin (Lilly) has been made available through license by the United States Treasury Department for interstate sale. While things remain to be done in the perfection of treatment and prevention, one may safely say, while we take off our hats to the Dicks, that another age-long disease has been conquered and its baffling problem solved.

It seems then that some of the national and world-wide problems of disease and public health problems have been solved. This epochal success in ferreting out the cause and discovering the methods of eradication of disease distinguishes this century above all the ages of the past. For this we men in medicine must entertain the highest interest and appreciation and, in such a spirit, encourage and aid all efforts made by boards of health through our country and in our state and city in erecting every safeguard against increase of disease.

But, our problems in medicine are more individual—both as to disease and as to patients. So, let us turn to some of these problems that are crossing our path in daily work and briefly comment upon some of them. It augurs well for disease that dentistry and medicine in these later days are finding problems of mutual interest in the daily routine of work. Besides this, it augurs well, in the general trend of medical knowledge, that the multiplied ends of medical diseases, are being gathered together into, at least, more simple generalization.

Focal infection, embracing the idea of a primary portal of infection, is a place from which bacteria invade secondary places in the body. The focus may be acute, as is observed in tonsillitis, and secondary as in articular rheumatism: the primary focus may be chronic, and apparently symptomless in its initial area, while in the secondary field of its manifestation, emphatic symptoms, acute and chronic, may appear. To Billings, and a group of workers at Rush Medical College, is due the credit of emphasizing this important primary and secondary relationship. Focal infections of the mouth no longer belong expressly to the domain of the special workers in that organ. This orifice and its structures serve as a port of entrance, and the harbor of implantation. From this primary focus, by the blood stream and by the lymphatics, bacteria go to secondary places in the body. The mouth, pharynx, nares, accessory sinuses, middle ear, and mastoid cells, the tonsils, teeth and structures that make up surrounding organs, serve as a chief site of primary infection. Although in cataloging other places of possible primary infection, one may cite the trachea or bronchi: ulcers of oesophagus, stomach, duodenum; gall-bladder, common duct, appendix and rectum, genito-urinary tract, male and female, and cutaneous infections; puncture wounds and the like. The pathogenic organisms operating in this fashion may be summarily stated as streptococci (s. hemolyticus, s. viridans, s. rheumaticus, s. mucosus and other strains); micrococcus catarrhalis, pneumococci, bacillus mucosus capsulatis, staphylococci (aureus and albus), meningococci, tubercle bacilli, colon bacilli, gonococci, spirochaeta pallida, endamoeba buccalis, fusiform bacilli, Welch's bacilli, diphtheria bacilli, tetanus bacilli and others.

The route by which primary infection travels to sites of secondary implantation may be by blood streams or by lymphatic currents. By way of blood, the micro-organisms, after breaking down local resistance and invading local capillaries, pass along this route in the form of small emboli, or as bacteria to certain tissues of affinity or selection in the general system and, there, implant a bacterial growth that, may or may not, set up secondary symptoms, acutely or slowly, according to virulence of the organisms, the multiplicity of the implanted germ, or the resistance of the secondary tissues attacked. Likewise, by way of lymphatics, micro-organisms, breaking through barriers of first line resistance, establish in adjacent lymph nodes as secondary growths. These lymph nodes serve as an intermediate means of implanting secondary, or systemic areas of infection, at distant regions in the body. Hypothetical or not, as this may be, the fact remains that no longer can there by any reason for scientific doubt, as to the cause and effect relation which exists between "focal infections" and certain definite systemic

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affections. This general discovery of disease manifestation has opened up a new field that has made the science and art of internal medicine a department of knowledge alive with new possibilities and new hopes.

Let us turn briefly to note some of the more common diseases which may have a primary origin in focal infections. I call your attention, in the first place, to tonsillitis-acute articular rheumatism, or rheumatic fever, a hyphenated disease association. The relation of tonsillitis to rheumatic fever has been recognized for years. It was called a complication; articular rheumatism coming after an attack of tonsillitis. Now we know the focus of infection in the tonsils is caused by the organism that also produces articular rheumatism.

Rosenow has shown that the organism, streptococcus rheumaticus, may be obtained and artificially cultivated from foci of infection in the tonsils, also from alveolar abscess, infected sinuses, abscesses involving the fingers and toes, infected lymph nodes. He has also cultivated this organism from the stools, urine, blood and joint exudates of patients with rheumatic fever. Acute faucial tonsillitis is a frequent associate of acute rheumatic fever; chronic tonsillitis, with or without symptoms, is most often the cause of chronic rheumatic arthritis. I need not amplify this; we recognize the relationship.

The same factors obtained in relation to acute and chronic infections of the oral cavity and the heart and blood-vessels. During the course of acute tonsillitis or acute abscesses of the teeth or accessory sinuses, the internist may wisely keep a keen ear for signs and symptoms of endocarditis. The malignant streptococcus, by necrosis and destruction of tissue in the mouth, at the site of the abscess, invades small blood vessels in adjacent fields, and, by blood culture and migration, passes to the place of choice in the endocardium. Upon the fringe of the mitral valve is set up a secondary inflammation and necrosis of tissue. Thus, we have the endocarditis of childhood and youth. Malignant ulcerative endocarditis occurs in this manner. The blood stream becomes infected with "streps"; the emboli lodge here and there in the body; the blood cells undergo destruction and hemolytic spots stain the skin. What may not be the train of complicating diseases in such a state of bacteremia? Myocarditis or degeneration of the heart muscle-wall may logically occur; for may not the coronary field of blood vessels receive early the first invading organisms as they leave the left ventricle, or may they not travel by the lymphatics directly into the heart muscle? By embolic invasion of the brain, setting up reactions in the tissues there, the same process of implantation may produce chorea which so often occurs in this condition of oral infection. Besides we internists frequently note in oral foci a tendency to goitre (or more properly thyroiditis in young girls especially). In rheumatic fever this is noted in 50 per cent to 80 per cent of cases. In the more chronic infection of the tonsils and jaw bones, goitre is common; and we believe there is a cause and effect relation often. So, also, we observe in these cases erythema nodosum and herpes zoster.

In the chronic focal infections of the teeth and jaw bones, as well as of the tonsils (although tonsillar infection in advanced life is not so frequent, by far, as alveolar infection) we now recognize definite chronic systemic affections which are equally slow and insidious in their pathologic changes and symptomatic manifestations, as in the original focus. These oral infections appear in chronic arthritis, or joint disease, and in serious heart disease. The joint changes we will pass over, but point out the malignant effect upon the heart, as this is not so apparent, either to the patient, the family, or the doctor. As this pathology comes in the 5th, 6th or 7th decade, there is associated various complicating changes of advancing age. This only makes the significance of oral infection more serious. The most serious of the heart changes is that due to streptococcus viridans, producing endocarditis lueta or subacute infective endocarditis. In the early stages the symptoms are mild; the patient is about, but not well, tired and not able to endure physical exercise without distress, general debility, loss of weight, slight chilliness, and night sweats. From this train of symptoms fatal endocarditis and heart failure will ensue in the course of eighteen months. Death may be sudden or may come after a lingering illness. The most usual source of streptococcus viridans bacteremia, according to Billings, is pyorrhea alveolaris. Again, let me point out another hyphenated disease complex: focal in-

fection, acute appendicitis. Focal infection—bacteremia, and acute infection of the vermiform appendix has been shown by the work of Rosenow and others. The invading microorganism, traveling by way of the blood stream, reaches the appendix and lodges in the small vessels of the wall of that vestige of intestine and there sets up an inflammatory process. The virulence of the infection and the pathology resulting depend upon a number of factors which we will not need to enumerate. The same relationship exists between focal infections of the mouth (and elsewhere) and that other commonly infected viscus of the alimentary tract, the gall-bladder. We all remember, twenty years ago, when it was clinically an axiom to say that typhoid and gall tract infection were commonly associated, as cause and effect. So, we can now say, based upon the work of Rosenow and others, that focal infections, such as tonsillitis and alveolar abscesses, and other accessory sinuses, give rise to the source of strains of streptococcus that selectively proceed to the small blood vessels in the mucosa of the bile tract, notably the gall-bladder and there set up inflammation and symptoms of cholecystitis. Not to labor the point, I should like to briefly point out that gastric ulcer, duodenal ulcer, acute pancreatitis, acute osteomyelitis, chronic infective arthritis, glomerulonephritis, muscular rheumatism and chronic neuritis, are a few of the general diseases met with in the practice of internal medicine which have primary origin, and, it may be, sustained existence, in chronic focal infections, very often located in or about the mouth.

To have established this important fact in the development of these well known and most common diseases is to have solved a large part of a great medical problem, both from the standpoint of prevention and the cure of these systemic maladies. Hence, tonight, we may feel that our mutual interests in these diseases, partially solved, are deeply interrelated, and that the establishment of this relationship will be the forerunner of better work in general medicine, as well as in the various specialties.

No summary of the problems of medicine can omit syphilis. This widespread infection of the human race has for ages entered into all medical problems. I shall not go into a statement of reasons for this. It is too apparent. But we must, although briefly, comment upon this disease in connection with one of the solved problems. If it is not solved, epochal discoveries have made the problem susceptible of solution, in part. Incidence of this malady is widespread; it affects your work in the mouth; it affects my work in internal medicine from many angles. Can you really believe it has been only within twenty years that the cause of syphilis was discovered? In May, 1905, Schaudinn and Hoffman announced the discovery of spirochaeta pallidum, the causal agent of syphilis. For ages the cause was unknown. Noguchi, in 1911 first grew the organism in pure culture. And, now, the trend of belief is, based on the work of Nichols and Reasoner, that there are several strains with characteristics sufficiently distinct to furnish means for differentiation. On this hypothesis, is based the hope of establishing the predisposition of certain syphilitic infections for certain systems of the body such as visceral syphilis, vascular syphilis and syphilis of the nervous system. This was an important discovery. I shall not attempt to describe the well-known features or symptoms, from the primary desion, through the secondary manifestations in the skin, and on through the tertiary stage of destructive pathology, which may pass from one generation to another. Particularly, I might mention the blight of syphilis in the oral cavity, where much of your work is done. The most important and frequent lesion of the mouth is the mucous patch or erosive syphilis, seen on the soft palate, the tonsil, the tongue, and the buccal mucosa. At the angle of the mouth it may cause a deep fissure. It occurs in first and second year after infection. The late manifestations of syphilis of the mouth are nodular or gummatous lesions. Gummata may be seen in the bone and periosteum. Teeth changes of congenital syphilis need no comment. Oftentimes, workers in your field first have opportunity to think of the use of the next great discovery in the history of the disease, and one of the greatest human accomplishments in medical science, the Wassermann test. The appearance of some blight of the mouth may be the first opportunity presented for the medical man to get a "look in" on this disease.

While the early diagnosis of syphilis may be obtained by the demonstration of the specific organism by the means of the dark field illumi-

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nation, or staining of tissue sections, the Wassermann complement fixation test is the diagnostic test of importance in later periods. Upon this, the medical diagnostician relies, not alone, but in part. The "Wassermann" of the blood and spinal fluid is to be sought in all cases of suspected syphilis. The next advance in this disease, leaving out consideration its prophylaxis, is its treatment. In this field another important problem has met with solution, at least, in part. The discovery of "606" or arsphenamin by Ehrlich was remarkable and marked a new era in the treatment of syphilis. Salvarsan, the trade name, was first employed therapeutically on a large scale in 1910. A review of the past fifteen years of the effect of arsenical therapy on the cure of syphilis, while falling short of some of the brilliance of its first promises, is today, beyond doubt, the most effective method of treating syphilis. The refinement of the many preparations, as we have them today, combined with the use of mercury, enables one, by intravenous administration, to abort or cure syphilis better, now, than at any previous period of man's knowledge of the dreadful disease. And, in leaving this disease, my last word to you may properly be, to look out for the congenital defects of syphilis as found in the teeth and mouth, and as associated in the eyes, the bones, the skin and mucous membranes.

I cannot refrain, in this connection also, from commenting upon malaria. The development of our knowledge of malaria is one of the most brilliant feats of internal medicine. It had a devastating effect among Egyptians along the lowgrounds of the Nile; it affected the ancient Romans who lived about the marshes of Rome with relentless recurrence; it prevented the development of our own South for generations; and it stood as an implacable barrier against the successful opening of the Panama canal. Malaria is today, however, well in hand as a medical problem. In 1880, Laveran discovered in blood cells the plasmodium malaria. In 1898, Ross discovered that the organism was transmitted from man to man by certain species of mosquitoes, and that this was the only way. In 1912, Bass and Johns successfully cultivated the malarial parasite. The pathology of the disease embraces its destructive effects upon and in the red blood cells, the marked changes in the liver, spleen, kidneys and brain, not to mention numerous other processes of pahtology elsewhere.

The destruction of the mosquitoes transmitting the malaria is accepted as the ideal way of preventing and blotting out the propagation of the disease. The study of methods of destruction of the breeding places, the protection of man from the bite of mosquitoes, and the destruction of malarial plasmodium in man, constitute the chief items in the problem of prevention. So, the treatment of the problem embraces a wide field of effort, touching the problem of engineering, house screening and quinine administration. On these three depend the solution of this problem.

Just here, parenthetically, let me say that the literature of today is filled with the suggestion that the injection of malarial parasites into nervo-syphilitics, or paretics, offers the best chance for cure of this malady. This needs further study.

As the mouth is your field of work, it seems quite appropriate to outline a few of the problems connected with alimentary tract. The teeth, physiologically in mastication, perform the first acts of digestion. The gross food products, used in adult life, are bitten off, masticated and caused to be more or less saturated with salivary secretion during their excursion through the mouth. The hypersensitive touch-sense of the nerves of the mouth, enables that organ to determine the degree of mastication needed. The action of the saliva acts to dissolve food constituents, to partly digest starch, to soften the mass, and to coat the mass with mucus so as to enable it to pass more easily through the oesophagus. The teeth and the secretion of saliva glands enter thus into the beginning of digestion in an important way. So, into the stomach partially digested food is received. In this organ some new problems have recently come to the forefront. Whereas much was thought of the secretory function of the stomach, now we give to its motor function a position of greater importance.

The control of the emptying of the stomach through the pyloric sphincter has been recently recognized and these important physiologic facts have been noted: (1) when carbohydrate food is fed, it ordinarily leaves the stomach fairly rapidly; (2) Proteins ordinarily leave

the stomach more slowly than carbohydrates. This has considerable bearing on the acid control of the pyloric sphincter and enters into the treatment of pathological states of the stomach. In connection with these new physiologic studies, we recently, by the use of the duodenal tube, made studies of the duodenal secretion. We have been using the duodenal tube for bile tract lavage and drainage. This is done by the Lyon method, which consists in introducing a duodenal tube into an empty stomach and directing the patient to lie on the right side until the reaction of the fluid returning through the tube is alkaline. When this is obtained, two ounces of saturated solution of magnesium sulphate is introduced. This, by the law of Meltzer, permits the magnesium sulphate to enter the common duct and the gall-bladder, and stimulates the evacuation of these tracts. This, as roughly described, enables one to lavage the common duct and gall-bladder. Such a course of treatment in cases showing evidences of cholecystitis, cholangitis, or duodenitis is meeting with no inconsiderable success. This success depends upon its application in properly selected cases. It is no cure for gall-stones or for any serious or advanced pathologic processes.

Let me bring this too long discussion to a close by pointing out the great advance that has been made in diabetes and in the use of insulin. This enters into your work because diabetes is on the increase in this country, as shown by the statistics of Joslin. In diabetes the teeth, gums, and general oral hygiene are important considerations. In diabetes, with the high blood sugar in all tissues, with insufficient vitality in the tissues from a lack of combustion, the gums and pericementum form a culture ground for bacteria. Oral sepsis is an early result. The salivary glands, also, soon fail to function. This adds to the unhygienic state in mouth and so pyorrhea, caries and abscesses, with many other pathologic factors, appear. All this, I am glad to say, insulin can improve, assisted by a proper dietary measure. Likewise, in all surgery, not only in dental but also by general surgery, in cases of diabetes, insulin, properly administered, with blood sugar studies as a guide, is a potent and remarkable remedy.

So we may say that the discovery of insulin is a partial solution of a great medical disease problem. But one must remember that it is not a cure. However, the discovery of insulin forms a chapter of thrilling accomplishments in internal medicine. It is no longer in the experimental stage. It is a proven agent of value.

Now, as you know, the number of obese people in this starch or candy eating age, to say nothing of soft drinks together with sedenetary habits, is on the increase.

Overtaxing the pancreatin function or the degeneration of the islets of Langerhans from chronic infection by way of the common duct, produces impairment of function of the internal secretion of pancreas. As a result, the blood sugar is not burned in the tissue. The blood sugar is increased to a high state of saturation. The kidney is the route of sugar loss. The patient presents all the classical symptoms of diabetes, increased thirst, increased appetite, increased urine secretion, possible loss of weight and strength and a multitude of disturbing symptoms in mouth, skin, muscular and nervous system. The condition may progress to acidosis and coma.

Banting, in 1921, found that he could produce usable insulin from the pancreas of the foetal calf. With this he was able to reduce the artificially-made diabetic rabbits to normal blood sugar by injection of insulin. Through a series of experiments the use of it was made possible in man. It has become of great use in diabetic cases. I am not at all sure that high blood sugar in your work may not need controlling often. Insulin is dangerous, however, and should not be used by one not familiar with diabetes and its problems.

Now, let us turn briefly to another group of medical problems in which considerable knowledge has been gained within the last few years. I refer to the ductless glands. Much fanciful and much foolish literature has been produced on endocrinology. But, nevertheless, there is a modicum of truth to be found in it. There is considerable difference between discovery of the effect of deficiency of the secretion of internal glands, and the use of glandular extracts as remedial agents to overcome such deficiencies.

Advanced disease of these glands displays gross distortions of growth; the dwarf, the giant, the cretin, the mongolian idiot, adiposa dolorosa, myxoedematous patients. These gross maldevelopments, while interesting, of-

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fer only curiosities. Little it is that glandular therapy can do in these advanced conditions. The action of the adrenals and the thyroid are solving some new problems. The adrenals furnish an internal secretion which has a definite action: (1) on the circulation, (2) on the muscular system, (3) on pigmentation in the skin, (4) on metabolism, and (5) on sexual development. For instance, Addison's disease is signaled by progressive muscular weakness, increased pigmentation in the skin, hypotension and a train of symptoms in the gastrointestinal, circulatory and nervous system. The most interesting advance in this field is the action of therapeutic uses of adrenalin. Adrenal in 1:1000 solution has become a widely used agent. You doubtless use it in your work. Internists use it hypodermically in asthma, angioneurotic oedema (or urticaria), Addison's disease, hemorrhage, as a test in heart function and hyperthyroidism (Goetsch Test).

Also, the pituitary gland has recently come to the forefront in medicine. I can only hint that acromegaly, or skeletal overgrowth, is the most aggravated form of pituitary glandular hyperplasia. When it appears, an increase in length of the long bones, gigantism, results.

The thyroid gland disturbances afford us abundant examples of the late medical advances in endocrinology. The function of thyroid is to elaborate and deliver into the blood stream a secretion containing an active agent called thyroxin. The chemical and physiologic properties of thyroxin indicate that it is used in the process of oxidation; it is active in nearly all or all the cells of the body; it is a catalytic agent, hastening the rate of formation of a quantum of potential energy available for transformation or excitation of the cells; it controls the metabolism in the body. The human body contains approximately 14 milligrams of thyroxin. The subject is too complicated to elaborate upon and we can only hint in passing that acute colloid goitre and adenomatous goitre are most common disturbances of thyroid, while exophthalmic goitre is to be most feared. The most fruitful field of application of thyroid extract administration lies in the hypothyroid cases which are often seen in fat women with low metabolic rate. Thyroid extract is a potent remedy, but dangerous, and should be used only with care.

To conclude, as an internist, I may be pardoned for saying that medical men of the last quarter of a century may justly be proud of the solved problems of medicine, while they confess to the perplexity of much that remains to be solved.

1135 *West Franklin Street.*

INTRAPERITONEAL TRANSFUSION WITH REPORT OF TWO CASES.*

By CHAS. E. CONRAD, M. D., Harrisonburg, Va.

Several interesting articles came to my attention last summer relative to blood transfusion by the intraperitoneal route. About this time I had two babies to come under my care, who, it appeared to me, could only be saved by transfusion, and after examination I saw it would be necessary either to cut down on the vein, with the subsequent scars through life, or to use the sinus route. I decided to use the intraperitoneal route and will later give history and results in both cases.

First, I think it best to give a summary of what has been done experimentally to justify such a procedure. The following summary of the experimental work is taken from an article by David M. Siperstein, M. D., "Intraperitoneal Transfusion With Citrated Blood," *American Journal of Diseases of Children*, April, 1925.

"MacCallum has shown that the peritoneal epithelium is a complete layer of cells and entirely distinct from the lymphatic endothelium. These epithelial cells lie on a basement membrane, 'uniformly thin except where it overlies the lymphatic lacunae, in which position it is represented by a lattice work of fibrils separating the epithelium from the surface of the lymphatics.' The absorbing terminals of the diaphragmatic lymphatics are separated from the peritoneal cavity only by the loosely woven connective tissue and the peritoneal epithelium."

In 1906 Buxton and Torrey found that chickens' red blood cells were present in the anterior mediastinal nodes within fifteen minutes after their injection into the peritoneal cavity of a guinea-pig. Siperstein successfully demonstrated nucleated red corpuscles in the general circulation fifteen minutes after the intraperitoneal introduction of pigeon's blood into rabbits.

*Read before the meeting of the Medical Association of the Valley of Virginia, Clifton Forge, Va., June 4, 1925.

In the absorption of material from the peritoneal cavity, we have, therefore, to consider the mesothelial lining cells of the peritoneum, the thin basement membrane and the lining endothelium of the lymphatic vessels.

Ruh and McClelland recently showed that the blood introduced into the peritoneal cavity reappears in the thoracic lymph stream within ten minutes.

These results prove that red blood cells can pass through the peritoneal mesothelium without any morphologic changes. They also show that the lymphatics draining the diaphragm are the chief port of entrance.

MacCallum found that both the epithelial cells lining the peritoneum and the endothelial cells lining the lymphatics are phagocytic. He concluded that granular material injected into the peritoneal cavity finds its way into the lymphatics of the diaphragm in three ways: first, the lining cells of the peritoneum may actively phagocytize and transfer the particles to the adjacent lymphatics; second, the mechanical agency of the respiratory pumping motion may force materials between the cells: third, phagocytic leukocytes may pick up and transport the material from the peritoneal cavity to the lymphatic vessels.

Cunningham concluded that: "Most, if not all, of the transfer of granular material from the peritoneal cavity into the diaphragmatic lymphatics during the first thirty minutes takes place by means of a type of phagocytosis. That later on the leukocytes do bring in loads of granules is undoubted, but it seems very likely that the large inflow of free granules continues so long as any remain free in the peritoneal cavity."

In treating the cases in which I used the intraperitoneal route I used citrated blood (10 c.c. of a 2 per cent solution of sodium citrate to 100 c.c. of blood). While some authors state it is not necessary to type the blood, I feel that it is best.

See that the bladder is empty and insert needle into peritoneal cavity half way between the symphysis and umbilicus, using a needle with a short bevel at the point. After being inserted, the line of needle should be lowered to lie nearly on line with surface of abdomen. The blood can be given either by gravity or by syringe. I used a 30 c.c. Luer glass syringe and found it very satisfactory. The blood is injected slowly. In the two cases I am reporting I used 50 c.c. in one and 100 c.c. in the other for the first injection, but would not hesitate to give 150 c.c. as the first injection in the future, as neither baby showed any reaction after being given this amount, either by temperature rise over 1° Fahrenheit, abdominal distention, or abdominal tenderness.

Case Reports.

D. C., one year old, severe pyelitis and secondary anemia, haemoglobin 26 per cent (Sahli), red blood cells 1,450,000, August 27, 1924, white blood cells 11,000; differential count polymorphonuclear neutrophiles 43 per cent, lymphocytes 57 per cent.

August 28, 1924, 50 c.c. citrated blood from father, given intraperitoneally.

August 29, 1924, haemoglobin 28 per cent, red blood cells 1,600,000.

August 30, 1924, 150 c.c. citrated blood intraperitoneally.

August 31, 1924, haemoglobin 38 per cent, red blood cells 2,240,000.

September 5, 1924, 150 c.c. citrated blood intraperitoneally. Haemoglobin had dropped to 37 per cent, red blood cells to 1,950,000.

September 6, 1924, haemoglobin 44 per cent, red blood cells 2,160,000.

September 10, 1924, haemoglobin 58 per cent, red blood cells 2,800,000.

September 18, 1924, haemoglobin 60 per cent, red blood cells 3,000,000.

February 1, 1925, haemoglobin 70 per cent, red blood cells, 4,208,000.

It was interesting to see the pale, weakly-stained red blood cells in the slide before transfusion, then, after the transfusion, the large number of full well-stained cells. These cells would be destroyed a few days after each transfusion until the one on September 5. After that we did not notice this destruction or loss of haemoglobin. The baby has continued to do well since.

Report of Bacteriologist.

"The original blood picture showed a marked anisocytosis, a striking poikilocytosis, and a distinct oligochromemia.

"After the first transfusion there were two types of cells: the one, those of the recipient, were exactly the type seen before the transfusion; while the others, those of the donor, were large well-strained cells.

"After the second transfusion the same thing occurred. And although the large cells

were destroyed, there was still no evidence of any stimulation of the bone marrow.

"After the third transfusion, in spite of the fact that there were still no nucleated red cells, the blood showed a slight polychromatophilia and gradually developed into a normal picture."

F. R., thirteen months, chronic diarrhea, condensed milk feeding, mild scurvy, and severe oedema, face, body, and extremities.

August 4, 1924, haemoglobin 40 per cent, red blood cells 1,480,000, 100 c.c. Citrated blood given intraperitoneally from father.

August 6, 1924, haemoglobin 50 per cent, red blood cells 2,032,000, 130 c.c. citrated blood given intraperitoneally.

August 7, 1924, haemoglobin 60 per cent, red blood cells 2,688,000.

August 9, 1924, 100 c.c. citrated blood intraperitoneally.

August 11, 1924, haemoglobin 65 per cent, red blood cells 3,600,000.

August 15, 1924, haemoglobin 75 per cent, red blood cells 3,840,000, no oedema.

August 28, 1924, baby discharged in good condition, taking food well, stools normal, and no oedema.

Report of Bacteriologist.

"The first blood picture on this patient showed a very marked anisocytosis and poikilocytosis, red cells staining very faintly, barest outline in some cases. Differential gave a high lymphocyte count. After first transfusion anisocytosis very much reduced, with poikilocytosis running about approximately 10 per cent. Nucleated cells made their appearance here; 4 normoblasts and 3 megaloblasts were encountered when making a differential count here.

"The last examination of blood showed a large number of erythroblasts and were polychromatophilic. Anisocytosis had practically disappeared. Poikilocytes were not so numerous."

I feel sure both these cases would not have recovered but for transfusion. While I do not mean to depreciate the value of direct transfusion, yet I do feel there is a definite place for intraperitoneal blood transfusions due to its simplicity and good final results.

I wish to thank Mr. A. A Shanks and Miss Louise Story for doing the blood work in these cases.

EARLY SURGICAL INTERVENTION IN PROSTATIC HYPERTROPHY.*

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The frequency with which urinary disorders occur in men after the fifth decade of life varies from 50 to 60 per cent. Due to the chronic retention of urine, 15 per cent of this number will require some form of drainage, either by operation or catheter. The average age of the patient suffering from prostatic adenomata is sixty-five years. Those seen under fifty years of age are frequently the result of an inflammatory process at the bladder outlet, called median bar or contracture. Caulk reports a series of 494 cases in which contracture of various degrees was found in 40 per cent. It is generally agreed that this process is inflammatory in character. The other form of obstruction most often encountered is glandular hyperplasia. This occurs in from 65 to 80 per cent of all cases of prostatism. It is in this adenomatous tissue that carcinoma is so prevalent.

The position of the adjacent genital structures, including the seminal vesicles and deep urethra, affords a fertile soil for the development of the inflammatory type of obstruction. Cancer has been found in approximately 20 per cent of the prostatic adenoma removed at operation. Once the adenomatous tissue undergoes malignancy, the prognosis becomes very grave. The perivesical tissues are rich in lymphatics and the regional lymph nodes show involvement in 10 per cent of the total. Bumpus reports a series of cases with cancer of the prostate, in which metastasis involving the bones had occurred in 30 per cent, the pelvis and spine being the bones most often invaded. With the 30 per cent bone involvement added to the 10 per cent regional lymph gland metastasis, we have 40 per cent in which surgical intervention is definitely contra-indicated. The insidiousness of the malignant changes which occur in prostatic cancer has a tendency to lull the patient into a false sense of security. Hunt reports a series of cases, in which prostatectomy was done, with carcinoma present, and found that less than 20 per cent were living at the end of two years. It is only in the early stages, that enucleation

*Read before the Medical Society of Virginia, Maryland and District of Columbia, Warrenton, Va., May 20, 1925.

of the adenoma will afford the patient any hope of a permanent cure. The establishment of a suprapubic fistula, as a palliative measure is justified, where severe infection intervenes and massive retention is present.

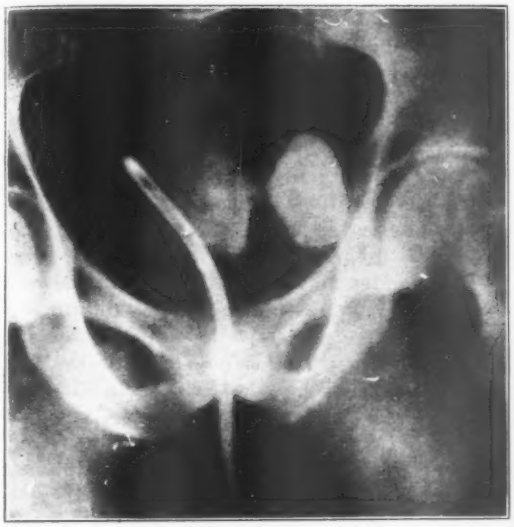

Fig. 1.—Dumb-bell stone, in bladder and diverticulum. Patient also has benign adenoma prostate. Diverticulum resected and stone removed. Author's series. Age 66.

We are concerned chiefly with the benign growths of the prostate, as it is in this type of case that an ultimate cure can be expected from an operation. When a patient comes to us for consultation, complaining of nocturnal frequency, difficulty in starting and stopping the urinary stream, together with pain and incomplete emptying of the bladder, our attention is immediately focused on the prostate as a probable cause of such symptoms. In the inflammatory type, the nocturia and difficulty of urination are usually present, and, as a rule, surgical measures are not as beneficial as is the removal of small segments of the fibrous ring, preferably by the Caulk cautery punch. Geraghty also devised an instrument for dividing the contracted ring at the vesical neck. By these methods the patient is not subjected to the attending danger of a major operation and the end results are even better than where the contracture is divided suprapubically. Caulk recently reported 175 cases in which the cautery punch was used with very excellent results. The presence of residual urine, together with difficulty in emptying the bladder, is indication for removal of the obstructing mass by surgical measures. The earlier this is done, the better will be the patient's chance of an ultimate cure. With residual urine present constantly, 90 c.c. or more in quantity, it is futile to temporize with palliative treatment, such as prostatic massage and the passage of sounds. If carcinoma is present, massage will tend to produce a widespread metastasis.

As a result of obstruction at the bladder neck, back pressure on the kidneys soon manifests itself by a low grade urosepsis, the severity of which depends on the character of the obstruction. If this back pressure is allowed to persist, the kidneys will become so badly deranged that the possibility of a cure is greatly lessened.

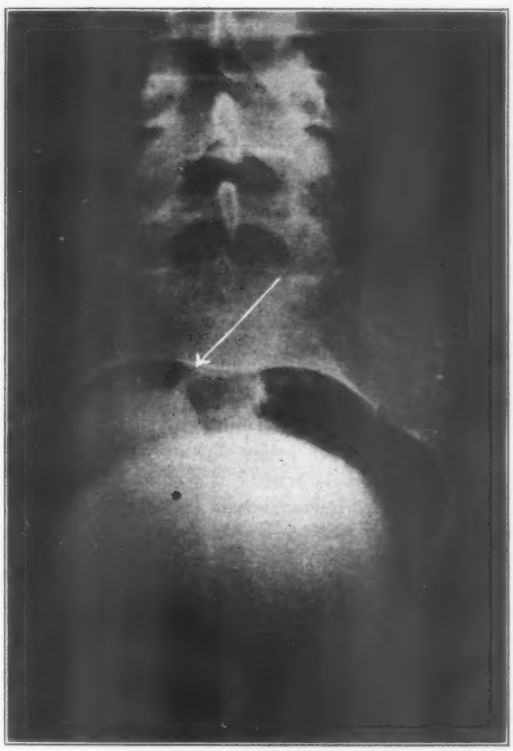

Fig. 2.—Large diverticulum bladder involving right ureter. Author's series.

When a man past fifty years presents himself with symptoms of a chronic urinary obstruction, a careful history and urological examination will reveal the cause of the symptoms and the degree of urinary retention. The blood pressure will be found much ele-

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vated as a result of the back pressure throughout the renal system. This being compensatory in character, forms a rough index as to the amount of back pressure and uremia. Following drainage of the bladder, the blood pressure will frequently drop as much as 50 mm. of mercury, finally becoming stabilized when the kidneys have reached the maximum output. The amount of residual urine may be quickly and accurately determined by catheterizing the patient following urination. Unless the residual urine is relieved by drainage, the kidney function becomes lessened and the nitrogenous waste products soon assume serious proportions in the blood. Very frequently these prostatic cases have an overflow retention, due to the protrusion of a pedunculated median lobe through the sphincter muscle. The resultant dribbling of urination causes the patient much worry and discomfort. Nocturnal frequency causes the loss of sleep and this, added to the gastro-intestinal disorders, so often an accompanying factor, rapidly undermine the patient's health, making him a poor risk for any interference.

Statistics show that the average expectancy of life following the institution of catheter drainage alone, is less than five years. The patient should be warned that no hope of any permanent cure can be obtained other than by a prostatectomy. Age *per se*, is not a definite contra-indication to enucleation of the prostate, as many men past ninety years have successfully undergone this operation.

Cystoscopy is of great value before operation, in order to determine the type of obstruction present, and whether or not a stone or diverticulum is present in the bladder. Judd found diverticula as an accompanying factor in 5 per cent of a series of prostatic cases. I found diverticula as an associated bladder condition, in seven per cent of my cases. It is generally agreed that the diverticulum should be removed at a separate operation, i. e., before the prostate is removed. Bladder calculi are very prone to form in the presence of the chronic residual urine with infection, and are seen in 12 to 15 per cent of the prostate cases coming to operation. These two complications of prostatic adenoma make it imperative to determine the exact pathology present, before the patient is operated on, in order to obviate the possibility of overlooking one of these conditions. That this has not been infrequently done in the past, is evidenced by the large number of patients with only partial functional recovery following prostatectomy. All cases do not require a cystoscopic examination, but if the so-called two-step operation is contemplated, the bladder should be opened sufficiently to permit a visual examination at the preliminary cystotomy. The scar tissue forming after this operation will preclude any such examination at a later date. With the 20 per cent malignancy added to the 17 per cent associated bladder complications, we have 37 per cent of the total in which an exact pre-operative diagnosis is imperative, if we are to give the patient the benefit of modern urological diagnosis.

The bladder may be drained by an indwelling catheter or by a suprapubic cystotomy, depending on the preference of the operator. It is the opinion of the writer that this can best be accomplished by the catheter in the majority of cases. Young, Freyer and others have shown that only about 7 per cent will not tolerate an indwelling catheter, and in their hands it was substituted for the suprapubic cystotomy in over 90 per cent of a total of twenty-

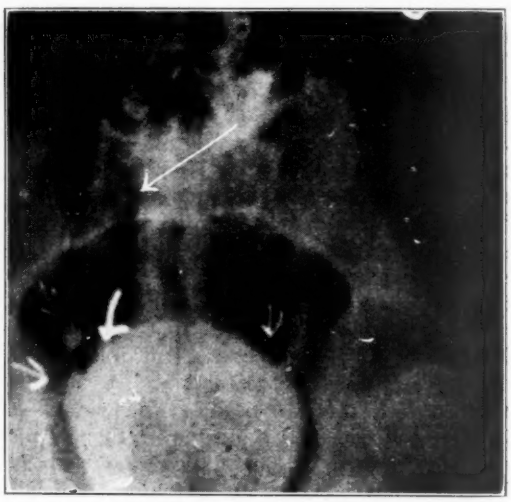

Fig. 3.—Cystogram showing multiple small diverticula of bladder (3) associated with adenoma of prostate. Left ureter also shows small sacculation. Patient age, 84. Author's series.

five hundred prostatectomies. Hunt reports a series of 202 prostatic enucleations and utilized the two-step operation in only 19 per cent. It is often said that if a patient does well with a catheter, he will do even better with a two-

step operation. That this does not apply is shown by the fact that the preliminary suprapubic drainage carries a definite mortality of from 8 to 10 per cent. In the open operation, better exposure is obtained and hemorrhage can be controlled with the exactness of any other surgical procedure. Even if a suprapubic cystotomy is done, the bladder should be gradually decompressed by catheter drainage. to obviate the rather high mortality following sudden drainage of a distended bladder. This converts the two-step operation into a three step prostatectomy.

The suprapubic method of approach permits access to that part of the hypertrophy most often seen, the large intravesical median and lateral lobes, which have herniated into the bladder through the internal sphincter, leaving the external sphincter free to control urination after operation. I have observed that the internal sphincter rarely resumes its function after prostatectomy, having had occasion to remove vesical calcui following perineal enucleatinns done elsewhere, in which cases the internal sphincter muscle was functionless. The mortality by either method is the same in competent hands, while it cannot be denied that the rectum and external sphincter are less liable to injury by the upper route. Incontinence of urine, in benign growths, is rarely seen in the upper route.

The mortality rate during the last fifteen years has steadily declined from 25 to about 5 per cent. This is due, in a large measure, to the more careful pre- and post-operative care given these old prostatics. It is frequently necessary to drain them over a long period of time to improve the kidney function sufficiently to justify an operation. The blood chemistry findings closely parallel the renal function tests and general well-being of the patient, so that we can accurately forecast the outcome, as well as prevent a terminal uremia. The daily blood pressure readings give a good insight into the patient's general condition. It should show very little variation. The amount of solids excreted in the urine should give a specific gravity reading of 1.010 or more before the patient is considered suitable for a prostatectomy.

Inhalation anesthesia, in the past, has been one of the chief factors in the mortality following this operation. With the improvements made in local anesthesia, it is no longer necessary to subject the kidneys to the added load that ether anesthesia implies. Chute, Day, Gardner, Smith and others have obtained excellent results with intradural anesthesia. In my hands it has been very satisfactory. The marked hypotension following its use can be largely eliminated by a low injection, given slowly, with caffein hypodermically, before the anesthetic is injected. Labat and Meeker have

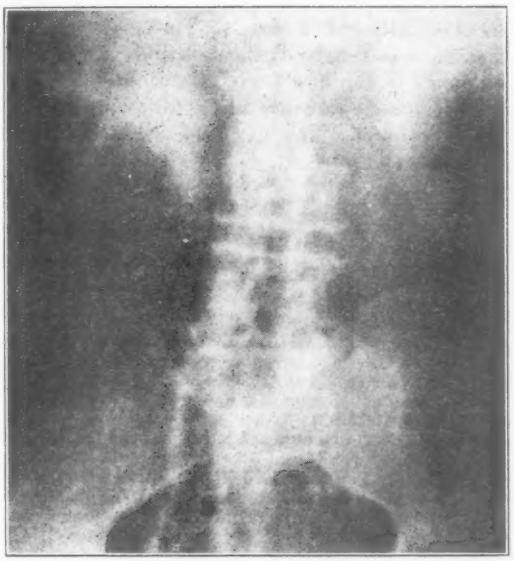

Fig. 4.—Cystogram shows bladder contents regurgitated into ureters, and both kidney pelves. Diagnosis bilateral, hydroureter and hydronephrosis, result obstruction by prostatic adenoma. Author's series.

pointed out the value of transsacral and caudal block for anesthesia of the prostatic region. It is successful in 90 per cent, if its use is limited to those who are especially trained in its administration. Ethylene promises to supplant nitrous oxid and gas in cases where local anesthesia is not used. The relaxation is much better and cyanosis is absent. The breathing is regular and quiet. Kretschmer used it with very satisfactory results in a series of cases. The danger from explosion has largely been eliminated.

The end results following operations on the prostate show that we can promise the patient a good functional result in at least 85 per cent, with less than 5 per cent showing no definite improvement. We are often asked what will be the effect of the operation on the sexual function. Carefully compiled follow-up records show that where the sexual function is pres-

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ent before operation, it will be present in about 75 per cent of the cases following operation if a suprapubic prostatectomy is done. Though the prostate gland is essentially concerned in the sexual cycle, removal of the adenoma does not interfere with its physiological function.

In conclusion, it may be said that the end results following prostatectomy, as concerns function and a final cure, depend on how long the back pressure and chronic kidney disease has been allowed to persist. The earlier the obstruction is removed, the less likely will carcinoma develop and acute retention supervene. In my hands the mortality following suprapubic prostatectomy has been 4.4 per cent in a series of unselected cases.

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1720 *Que Street, Northwest.*

SCIATICA TREATED BY EPIDURAL INJECTION.*

By WILLIAM B. MARBURY, M. D., Washington, D. C.

The injection of the epidural space in the treatment of sciatica is not a new conception. A number of authors have reported good results and the only wonder is that it has never been more popular, seeing that most forms of treatment, both medical and surgical, have not been brilliant in their results. Stretching the nerve was practiced at one time but has been abandoned. Manipulation under an anaesthetic has proven of benefit in certain cases, but on the whole has not been particularly beneficial. The removal of foci of infection, such as apical infection of teeth, bad tonsils, infected gall-bladders, etc., is important and should be attended to in each case. The treatment by immobilization in a plaster cast has been beneficial, particularly in cases where there is a definite history of injury. These are just a few of the many treatments that have been used to alleviate the pain commonly known as sciatica.

The pathology of sciatica is not definitely known. No characteristic lesion of the nerve has been demonstrated. "Sciatic neuritis" and "sciatic neuralgia" are terms that have been used to designate where there is pathology and where there is none, but at the present time the differentiation is hardly justified. Osteoarthritis of the lumbar spine is not infrequently seen in patients suffering from sciatica and yet it is not characteristic of this ailment. It is just as frequently encountered where there is no pain.

Cathelin and Sicard injected the epidural space as early as 1901 for relief of pain in sciatica. They used cocaine in saline solution. Ott reports forty-eight cases treated by the injection of 50 c.c. of 0.5 per cent novocain in physiological saline. At the same time all possible foci of infection were removed. In this series, 29 per cent were permanently cured, 37 per cent were restored to active life with a fair degree of comfort, and 34 per cent apparently not improved. Other authors have reported even greater success. Feuillade had 80 per cent of cures among soldiers.

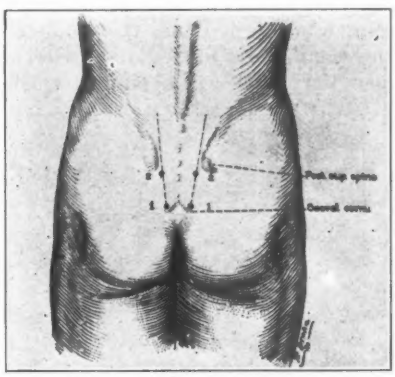
Ott thinks that the beneficial result from injecting novocain solution into the epidural space is due to pressure on the roots covered by a fold of dura or on the ganglia in the foramen. He notes that the injected fluid may reach as high as the cervical region.

The technic is fairly simple. No previous preparation of the patient is necessary. The injection may be done at a hospital, at the patient's home, or in the office, where the case is ambulatory. The patient lies face downwards over several pillows placed so as to elevate the buttocks. The hiatus sacralis is located at the junction of the sacrum and coccyx. In a thin subject this is not difficult, but in very stout subjects I have found it helpful to put a gloved finger in the rectum and by

*Read before the meeting of the Medical Society of Virginia, Maryland and the District of Columbia, Warrenton, Va., May 20, 1925.

manipulating the coccyx, locate the hiatus. Under strict aseptic conditions a Labat spinal needle is inserted through the skin, at an angle of about 45 degrees, and a small amount of novocain injected. This is continued until the needle can be felt to impinge upon the bone. A little novocain is injected ahead of the needle at each advance, which makes the procedure practically painless. Where the needle is felt to touch the sacrum it is depressed about 10 degrees and usually slips into the sacral canal without difficulty. It should be inserted 5 cm. or 6 cm., being careful not to puncture the dura. If any spinal fluid appears after waiting a few seconds the needle is withdrawn one or two cm. and the injection is not begun until it is quite certain that the needle is not in the subarachnoid space. The solution is prepared by sterilizing 0.25 gms. of novocain in a small amount of physiological saline and then adding enough of the latter to make 50 c.c. The solution is injected slowly. The patient usually complains of pain on the affected side and I have learned to look upon this as a favorable sign.

If one injection does not relieve the pain it is well to repeat it in two days. Several injections may be given.



Shows position for insertion of needle between the cornua. (Labat).

Case 1.—Colored, female, thirty-six years old. Seen April 18, 1924, complaining of pain in her left thigh and hip. Had typhoid fever. Pneumonia two years ago. One child living and two miscarriages. The pain in her leg began in January, 1923, and was fairly constant thereafter. Practically bed-ridden.

She received four injections, 50 c.c. each of one-half of one per cent novocain in the epidural space at intervals of two and three days. She left the hospital unimproved, but wrote on September 25, 1924, that she had entirely recovered. Wassermann negative. X-ray showed "arthritis of each sacro-iliac articulation," and multiple abscesses of teeth. Alcohol and novocain had previously been injected into the nerve without relief.

Case 2.—Mr. B. B., white, male, fifty-five years old. Seen March 2, 1924, complaining of severe pain in his left leg. Several years ago he was shot while hunting and a number of grains of shot have remained embedded in the muscles of the leg. The present trouble began the latter part of December, 1923, and since then he has been disabled. Has had to take morphine for the relief of the pain. X-ray showed "slight arthritic changes of lumbar vertebrae." Teeth negative. On March 8th, 15 c.c. of novocain solution (one-half of one per cent) and 20 c.c. of normal salt solution were injected into or in the vicinity of the sciatic nerve. No relief followed. On March 17th, 40 c.c. of one-half of one per cent novocain was injected into the epidural space and two days later this was repeated. He was completely relieved of the pain and went home two days after the last injection. To date he has had no return of the pain.

Case 3.—Col. J. B. D., army officer, fifty-five years of age. Seen April 7, 1924, complaining of pain in the right leg. Tonsils removed in 1921. Has had some decayed teeth drawn. The trouble in his leg began in December, 1923, after a long automobile ride. Just previously he had had a bad cold. He was treated for several months at Walter Reed Hospital. An X-ray taken then showed some arthritis of the lumbar spine. On April 7th, 50 c.c. of one-half of one per cent novocain was injected into the epidural space. The patient left the hospital an hour or so after the injection. He writes under date of May 14th that he has had no return of the pain.

Case 4.—Mrs. J. T., white, age sixty-one. Seen January 10, 1925, complaining of severe pain in her right leg. She has always been delicate. Eight years ago she had a nervous breakdown. The present illness began three months ago. Since the onset she has spent most of the time in bed. The pain starts in the buttocks and runs down the thigh and into the calf. On January 10th, 50 c.c. of novocain was injected into the epidural space. This

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was repeated on the 15th. Condition much improved.

Case 5.—Mr. J. S. DeL., age fifty. Seen January 16, 1925, complaining of pain in the left leg. He has only seven remaining teeth. One appears to be decayed. Present illness began about a month before entering hospital. It came on suddenly after stooping hurriedly to catch a falling object. The pain was in the back at first, but later more severe in the thigh and calf. The pain was so severe one night that he called an ambulance about three A. M. and was taken to the Emergency Hospital. On January 16th, 50 c.c. of novocain solution was injected into the epidural space. Two weeks after the injection patient reported himself free from pain, but as having some numbness on the left side. He has been able to resume his work as a cook.

Case 6.—Mr. F. J. W., age sixty-eight. Seen January 26, 1925, complaining of pain in his left leg. Operated on for appendicitis and gall-bladder trouble. Present illness began three weeks ago with pain in the left thigh, radiating to the knee. The pain has been constant and burning and he has been unable to sleep. The patient refused to go to the hospital and an effort was made to inject the epidural space with novocain at his home. He could not lie on his bed because of the pain but bent over the side of the bed. The position was awkward and it is doubtful if any of the fluid reached the epidural space. He did not experience the characteristic sensation of pain on the affected side. He received no benefit from the injection and refused further treatment.

Case 7.—Mr. S. N. P., age forty-three. Seen March 2, 1925. In 1905 he was wounded in the chest (Russo-Japanese war) and since then has had at intervals a discharging sinus. About six weeks ago he started with pain in his left leg, particularly the thigh and calf. The pain has never been very severe and disappears when he is at rest. On March 3rd, 50 c.c. of novocain solution was injected into the epidural space. On May 14th patient reports himself as having practically no pain.

Case 8.—Mr. N. L., age forty (?). Seen April 3rd. The pain in his back and right leg had been of long duration, dating back ten years. At first it was in the lumbar region, but more lately it had been in the thigh and along the sciatic nerve. He had been unable to sleep. A cast was applied but gave no relief. Two teeth were found abscessed and were withdrawn. April 4th novocain was injected into the epidural space. Considerable improvement.

Case 9.—Mrs. F. M., age fifty. Seen April 23, 1925. Past history unimportant. Present trouble began about the 15th of April with pain in both legs and back. Just prior to the onset she had had a severe attack of sore throat and stomatitis. The pain was worse in the morning about 2 A. M. or 3 A. M. It has jumped about, being first in one leg and then in the other, and worse sometimes in front and sometimes in the back. She complained of her knees and shins hurting her. The night before coming to the hospital she had kept her physician by her bedside until 3 A. M. because of the intense pain. An X-ray showed marked osteoarthritis of the lumbar spine. Wassermann +. On April 27th, 50 c.c. of novocain were injected into the epidural space. The patient had immediate and complete relief from the pain.

Case 10.—Mr. H. H. S., fifty years old (?). Operated on for appendicitis April 14, 1925. He had had pain along the course of the sciatic nerve for about two months. Not enough to keep him awake. On May 14th, 50 c.c. of novocain was injected into the epidural space. Patient went home immediately after the injection. Very little if any improvement.

Needle in epidural space. (Labat).

Summary.

Of the ten cases that form the basis of this report, seven were male and three female. All but two had definite pain along the course of

the sciatic nerve. One of these had pain in both legs which was generalized; the other, on the outer side of the thigh. Seven were confined to bed when first seen and three were ambulatory. Only one gave a definite history of an injury, and in another case the attack followed a long automobile ride and a bad cold. Lasegue's sign was positive in six cases. An X-ray was taken in four cases and in each case the roentgenological report was osteoarthritis of the lumbar spine or sacral region, or both. The number of injections varied from 1 to 4—average 1.6. Focal infection may have played a part in five cases. The average duration of symptoms before injection was 7.3 weeks. Four cases were apparently cured, three improved and three not improved. One of the latter probably should not be counted because it is doubtful if any fluid reached the epidural space.

Conclusion.

1. The pathology of sciatica is not definite.
2. About 65 per cent of the cases treated by the injection of novocain solution are either cured or greatly improved.
3. The best results have been seen in the cases which had the most pain.
4. The injection is simple and without danger, if properly done.

1015 *Sixteenth Street.*

SURGERY OF THE GALL-BLADDER AND DUCTS.*

Clinical and Pathological Aspects.

By LINWOOD D. KEYSER, M. D., Roanoke, Virginia.

During the past few years our knowledge of cholecystitis and cholelithiasis has been somewhat modified from time to time by contributions from clinical and pathological sources. While dispute is still rife as to the function of the gall-bladder, we may hold certain facts as established. The gall-bladder seems to act somewhat as a tension bulb for the bile. It concentrates the bile in pigment content and adds mucus thereto. Furthermore, in some way, by its presence, the gall-bladder maintains an intermittent discharge of the bile into the small intestine. Animals lacking a gall-bladder pour their bile into the duodenum constantly, whereas those in whom it is present have an intermittent biliary flow brought about by stimuli incompletely known.

Experimentally and clinically, it has been shown that when the gall-bladder is removed the following phenomena may be observed. The sphincter of Oddi ceases to act as a sphincter, the common and hepatic ducts undergo compensatory hypertrophy and dilatation, and the discharge of bile into the duodenum becomes almost, if not quite, constant, rather than intermittent. No experimental or clinical data tend to show that the removal of the gall-bladder, with the physiologic readjustment which follows, has any deleterious effect on the metabolism or general health of the individual.

The pathologic types of gall-bladder disease need not be considered in detail. Aside from malignancy we may mention catarrhal inflammation of the mucosa, lipoid deposition being frequent and giving rise to such appearances as the terms "strawberry" and "fish-scale" gall-bladders describe; the thickened gall-bladder with infiltrated walls ond periductal lymphadenitis; pericholecystitis with adhesions to neighboring structures; cholecystitis with cholelithiasis; acute purulent cholecystitis (empyema); gangrenous cholecystitis (with impacted stone in the cystic duct); the condition of hydrops of the gall-bladder, and other pathological types which are well known.

It is a noteworthy fact that hepatitis, with lymphoid infiltration of the liver and thickening of Glisson's capsule, is to some degree always present with cholecystitis, and pancreatitis of a cicatricial type is likewise frequently found. The work of Deaver, Graham, Mann and Giordano and others in this field has been particularly illuminating. The portal of entry of infection to the gall-bladder has been much discussed, the liver and pancreas being held by some observers to be primary sites, with secondary spread to the gall-bladder by blood and lymph channels, or by the biliary secretion itself. Others, probably in the majority, feel that the gall-bladder is directly infected from the blood stream or from the portal circulation. Spread of the infection from the gall-bladder by lymphatic channels to the liver or pancreas explains the frequent involvement of these organs.

Clinically we may differentiate several types of cholecystitis. First, there is a spastic type, with short, sharp, lancinating pains radiating

*Read before the Southwestern Virginia Medical Society, in Pulaski, Va., March, 1925.

from the hypochondriac region, usually on the right side to the shoulder, around the costal margin or toward the umbilicus. Thickened bile, impacted pigments, stone or pylorospasm may cause this. The site of pain reference at times is interesting. Several years ago I had my attention called to the fact that an impacted stone in the cystic duct may not infrequently cause all of the pain reference to be located to the left of the midline, either high under the chest, or under the left scapula. I have seen this condition several times since. An illustrative case may be mentioned. In September, 1924, a female, *aet.* thirty years, consulted me complaining of headache, vertigo, and periodic attacks of pain always localized under the left scapula. At times also there was pain radiating around the left costal margin. Lyon drainage gave evidence of thickened, dirty, purulent bile and upon repetition the patient showed some relief. However, recurrences of the pain led to suspicion of gall-stones, although definite tenderness over the gall-bladder was only occasional and insignificant. X-ray examination showed the gall-bladder to be packed with stones. The patient entered the Roanoke Hospital and was operated on March 3, 1925. A thin walled gall-bladder containing about two hundred stones was removed. One of the stones was lodged in the cystic duct and this, to my mind, accounted for the colics associated with left-sided pain, there having been no recurrence of symptoms since.

Any sharp cramp-like pain in the upper abdomen or chest should lead us to think of biliary tract pathology as a possible cause.

The dyspeptic type of cholecystitis may be mentioned as a second group. These patients give a long history of epigastric distress, this coming immediately or within an hour after meals, not being relieved by further eating. There is gas, bloating, distention, eructations, nearly always a good appetite but the fear of eating. Qualitative food distress, especially for sours, fats, or sweets, which aggravate the symptoms, is almost always present in some degree. The patient complains of constipation, is sallow, and has frequent "bilious attacks." These prodromes may exist for years before upper right quadrant pain, tenderness, night attacks, colics, jaundice, and fever set in to clear the situation from a diagnostic standpoint. Almost all patients with gall-bladder disease will have shown symptoms of the dyspeptic type at some stage of their clinical course. It may be added that symptoms of "weak stomach," with general dyspepsia and gastro-intestinal disorders of the "reflex stomach" type, are probably more frequently associated with cholecystitis and its concomitant liver toxemia than any other disease. So frequently do we find the patient who has had his appendix removed for chronic appendicitis return with the old set of symptoms, possibly aggravated by the lapse of time, only to be cleared up with the proper treatment of the gall-bladder infection, which has been present from the beginning.

What we may speak of as focal cholecystitis constitutes a third group of cases. These are not common and should be diagnosed with care. A brilliant example of the type came under my observation several months ago. The patient, a woman of forty-five, suffered from headaches, pain in the back of the neck and spine, as well as a severe right sciatic pain. Her only digestive disorder consisted of sick headaches with the belching of gas. Tenderness over the gall-bladder was lacking. In X-raying the spine for possible bony changes, definite gall-stone shadows were noted as an incidental finding. The tonsils and infected teeth had been previously removed. In October, 1924, I removed a thin walled gall-bladder at the Roanoke Hospital. This contained twelve stones. The patient has had almost complete relief from pain in the neck and spine, there have been no headaches, but a recent letter from Florida where she has been spending the winter tells me that the sciatica, while much improved, still persists. To my mind the case represents one of so-called "innocent gall-stones" with an inflamed gall-bladder acting as a focus of infection. Probably had a chance X-ray finding not called our attention to the condition it would have escaped notice until further localizing symptoms developed. To be sure one must be conservative in removing the gall-bladder as a focus of infection and it would have been poor judgment to have operated on the case just mentioned, had we not had positive roentgen evidence of biliary tract disease.

A fourth group of cases which is of especial interest is that of typical migraine associated with cholecystitis. This disease is as a rule familial and its cause or causes are not well

understood. Probably it occurs even with its abdominal crises more frequently without cholecystitis than with it. Yet it is remarkable to see what striking improvement follows cholecystectomy at times. In fact, the only cases of apparently true migraine which I have seen permanently relieved were those associated with gall-bladder inflammation in whom cholecystectomy had been performed. Headache of some order is a very frequent finding in the history of cholecystitis. "Torpid liver," "biliousness," "deranged liver," and the like, were terms used in the last generation to account for such conditions. The idea of a liver toxemia which may bring about the pouring off of toxic products into the blood stream due to imperfect liver metabolism is gaining ground on a more scientific basis, the efforts during the past five years to develop a satisfactory hepatic function test being good evidence of this. It may be that certain types of migraine are explicable on such a basis. For this reason when the gall-bladder is removed and drainage of the bile becomes more constant and free, the liver may have an opportunity to overcome its malfunction, with restoration of the patient's health as a consequence. A case illustrative of the beneficial effects of cholecystectomy in migraine may be mentioned. A male, age forty-four years, consulted me last year complaining of recurrent headaches with nausea. These had incapacitated him for years. The usual dyspeptic symptoms, gas, bloating, upper abdominal distress, and tenderness over the gall-bladder and appendix had been present for years. Any indiscretion in diet would bring out a fulminating attack of migraine lasting one or two days, with temporary relief from vomiting, saline purges, and sleep brought about with various drugs. Slight tenderness over the gall-bladder and appendix was noted, but the X-ray evidence and other features of the examination helped us little. At operation a thin wall gall-bladder, with slight lipoid deposit and periductal lymphadenitis, together with a suspicious thickening of the liver capsule, was noted. The pancreas was normal to palpation. The appendix, which was bound down and adherent, was removed. After some deliberation, we removed the gall-bladder also. It is now nine months since operation. The headaches have completely disappeared along with the major features of the dyspepsia. It is interesting to note that this patient complained of loose stools for a number of weeks after operation. This is not an infrequent finding after cholecystectomy and is probably due to the constant outpour of bile into the duodenum. Fortunately, it tends to clear up after a period of time.

I will not enter into the relative merits of cholecystectomy and cholecystostomy—removal versus drainage of the gall-bladder. There are some, probably in the minority, who still hold that surgical drainage of the gall-bladder will ordinarily do everything to be desired. As the years pass and so many people are actually living without the gall-bladder, more and more do we find removal of this important viscus gaining ground. To my mind, drainage of the gall-bladder surgically or with a Lyon tube (if it really drains) can only hope to afford temporary drainage of the liver, a condition which cholecystectomy brings about as a permanent process. So frequently the temporary drainage afforded by suturing a tube in the gall-bladder is insufficient to allow the hepatic reparative processes to take place, that after a few months or a year of relief the patient comes back with a recurrence of former symptoms which can only be relieved by cholecystectomy.

In November, 1924, I removed the gall-bladder of a woman of thirty-five years of age, who had had typhoid fever in 1908. In 1910 her gall-bladder had been drained. In 1920, following several years of recurrent attacks, another surgeon had again drained. Following a short period of relief the symptoms returned, dyspepsia, pain, a tinge of jaundice at times, with severe frontal headache, relieved to some extent by vomiting, being most prominent features. When I first saw this patient her temperature was slightly over 100 degrees and there was acute tenderness in the right upper quadrant. In an interval of freedom from acute symptoms, the operation was done. Since her convalescence she has been again greatly relieved and I am watching her course with interest in the hope that this may be permanent.

There do seem to be some definite contraindications to cholestectomy. Acute cholecystitis which will not respond to medical treatment is probably better treated by drainage. Severe hepatitis, cholangitis, associated pancreatitis, and gangrenous cholecystitis from

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impacted cystic duct stone are conditions which require treatment according to the individual case rather than according to fixed rule. Some surgeons prefer not to remove the gall-bladder and open the common duct at the same operation.

The hazards of cholecystectomy have been properly emphasized. A high incision, elevation of the liver with the aid of a second assistant, who pulls up the round ligament and retracts the upper lateral abdominal wall, with careful packing back of stomach and intestines, will give good exposure of the gall-bladder fossa. In this way the junction of the cystic, common, and hepatic ducts can be carefully dissected out under vision before the cystic duct is clamped or cut. Such a technique will avoid most of the difficulties and keep the operative field under the surgeon's control. The cystic artery at times may slip away and cause apprehension. The surgeon can grasp the vessel betweeen his thumb and index finger temporarily until the field is sponged clear, when the tip of the artery can be identified and a clamp accurately applied so that there is little danger of injury to the common duct or other important structures, an imminent danger if blind clamping in a bloody field is attempted.

Most of the patients will do well if the abdomen is closed with no drainage, but as Dr. McGuire puts it, "a soft rubber drain does no harm and makes the surgeon sleep better."

The pathologic diagnosis of cholecystitis at the operating table and under the microscope is at times difficult. I have several gall-bladders which grossly and microscopically show little evidence of disease, which were removed because they contained stones. Whether one should remove the apparently normal gall-bladder "on the history" is a mooted point. The history, physical, roentgen and laboratory findings must all be carefully weighed. If hepatitis, pancreatitis, periductal lymphadenitis are found with an apparently normal gall-bladder, it is well to remember that these conditions may and probably will be greatly benefited by the physiologic changes that follow cholecystectomy, especially if we have a good history pointing to trouble in this region. It is to be emphasized that such cases should be closely followed by both surgeon and internist, subsequent improvement or lack of it being noted by means of "follow-up" records.

Common duct obstructions whether from stone, malignancy, or inflammation of the pancreas or stricture (which may be spontaneous or the result of operative trauma) lead us to the more serious considerations of jaundice, more difficult operative technique, and greater mortality. Pancreatic and stricture obstructions usually give us a painless jaundice, with a tendency to enlarged gall-bladder, if this be present, as was pointed out by Courvoisier years ago. The jaundice is deep and frequently no trace of bile is to be found either with the duodenal tube or in the stools, especially late in the disease. Severe colic, jaundice, often intermittent, with fever and prostration, help us to diagnose common duct stone. The duodenal tube will nearly always show some trace of bile in the return flow.

The administration of calcium chloride intravenously, together with transfusion and glucose by proctoclysis as developed by Walters in the pre-operative treatment of jaundiced patients should be mentioned as a great aid in reducing the bleeding time and in consequence lessening post-operative hemorrhage.

In states of total biliary obstruction with a destroyed or previously removed gall-bladder, we may find no liver secretion, but a mucus, the so-called "white bile." This indicates an extreme degree of liver insufficiency and our surgical efforts should be directed towards draining the common duct, when usually the return of true bile will take place in one to two days or even earlier. The absence of bile from the drainage after forty-eight hours is an ominous sign. Gradual drainage of the "white bile" by opening the common duct drainage catheter at intervals and letting out a little secretion at a time for a day or so, is advocated in certain extreme cases in order to avoid what Judd calls "liver shock," a state of collapse that may occur if the common duct is freely drained under such circumstance.

With the common duct completely obstructed from stricture or malignancy, anastomosis of the gall-bladder to the stomach or duodenum (cholecysto-gastrostomy or duodenostomy) will afford proper biliary drainage and give temporary relief. When the gall-bladder has been removed and the common duct has suffered injury, implantation of the hepatic duct into the duodenum preferably over a rubber

tube offers one source of relief and possible cure.

Malignancy of the gall-bladder and ducts is not frequent. It usually occurs in long standing cases of cholecystitis. Removal of the gall-bladder and drainage of the common duct or its resection, may give temporary relief, but on the whole surgery has little to offer with regard to permanent cure.

I have thus sketched in a cursory way some of the clinical and pathological aspects of biliary tract disease. Emphasis may be placed primarily on a few points. First, cholecystitis represents more than a local infection of the gall-bladder. We deal also with hepatitis, pancreatitis, and possibly some form of general gastro-intestinal infection. Appendicitis of some grade is nearly always found and peptic ulcer is occasionally present. Second, in removing the gall-bladder we establish to some extent a different type of bile drainage which seems to aid the organism to a great degree in overcoming these associated infections. At the same time we have removed a stasis point in the biliary stream where infection easily sets in and from which the other neighboring structures may be affected by lymphatic spread.

417 *Anchor Building.*

SINUSITIS IN CHILDREN.

By HERBERT R. ETHERIDGE, M. D., Norfolk, Va.

Introductory Remarks.—I believe sinusitis, especially in children, is very often overlooked and more often neglected. The reasons for this are numerous; some I shall mention.

Ordinary coryzas do not always clear up in the usual time, or they seem to clear, but really do not, and the parents think the child has caught a fresh cold, when in reality a sinusitis is present. Some mothers are so used to children having colds that they pay very little attention to such conditions.

Especially during influenza epidemics, when nasal discharge is so common, it is difficult for the mother and even the doctor to judge from the discharge an ordinary rhinitis from a sinusitis.

Development of Sinuses (post-embryonic)—. I think it well to say a few words about the time of development of the different sinuses.

According to Skillern, at birth, the frontal sinus is absent and makes its appearance between the end of the first and beginning of the third year, and up to the sixth or seven reaches only the size of a pea.

The sphenoid, at birth, is but a faint depression in the cancellated bone of the body of the sphenoid and begins to develop about the fourth month, being fully formed; is a real cavity not before the end of the first year, being fully developed at the age of sixteen.

Ethmoid.—These cells are present at birth and develop simultaneously with the frontal sinuses, from which they are derived.

Maxillary.—This sinus is present at birth and although very small, occupies a space internally to and not below the orbit. It is about the size of a small bean; the lining membrane is very thick, almost filling the entire lumen and giving it a slit-like appearance. The floor is high and barely reaches the attachment of the inferior turbinate.

This may seem very unimportant, but, given a child around two years of age, we could almost with certainty eliminate both the frontals and sphenoids as sinuses which could be involved.

In children under two years, the ethmoids are, in my experience, more often involved than the maxillaries. This, however, is contrary to the findings of many men with a wider experience.

Symptoms.—According to Lemere, attention has been drawn to the infection of nasal sinuses in children by one or several of the following symptoms:

Profuse nasal discharge, or post-nasal drainage, cough, persistent mouth breathing after tonsil and adenoid removal, pale face and lips, running ears, otitis externa, mastoiditis, poor appetite, recurring bronchitis, pneumonia, asthma, pleuritis, pyelitis, nephritis, headaches, mental hebetude, chorea and nervousness, arthritis, chronic pharyngitis, facial acne, conjunctivitis, phlyctenular and interstitial keratitis, and swelling of the cervical lymph nodes, etc.

Diagnosis.—Any nasal discharge which lasts longer than the time of an ordinary cold should be suspicious of a sinus condition. Signs of general toxemia should make one suspicious of sinusitis. In other words, any condition which could result from a focal infection, should direct our attention to the sinuses, and we should not feel satisfied, especially if no other cause is found, until we have eliminated the sinuses as a cause by every known means,

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by examination, transillumination, suction and X-ray.

Treatment.—1. Non-operative; 2. operative. A number of good men advocate post-nasal sprays and claim excellent results. I have never used this method. My usual treatment is as follows:

Nasal suction every day, every other day, or once or twice a week, according to the severity of the case.

It is surprising how well the children behave during this treatment. It is not pleasant, and even some adults rebel, but if you explain to the child what you are going to do and start the suction gently, gradually increasing the strength of same, you will very seldom have trouble.

This treatment, of course, does two things. It first of all removes some, if not all, of the retained pus, thereby promoting drainage and lessening the infection. It also produces a passive hyperaemia, which is very beneficial.

After suction, I usually irrigate the nose with warm saline and soda solution, especially if there is much pus and if the child is old enough and will co-operate sufficiently to hold her breath while irrigation is being done. This is very necessary as infection of the ears is apt to occur if she should not co-operate.

Nasal antiseptic drops seem to help in some cases. I often use a 1-5000 metaphen solution; neo-silvol 10 per cent; argyrol 10 per cent to 50 per cent; protargol 2 per cent to 5 per cent; etc.

Vaccines.—These are beneficial when resistance is low and stimulation of resistance is indicated. In my opinion, a specific vaccine is not necessary; any one which will stimulate resistance is beneficial.

If sinusitis could be gotten early in the acute stage, I believe a great many more cures would result, but when they become sub-acute they are more difficult to cure, and when they become chronic, non-operative treatment usually fails and they are fortunate if they can even be cured by operation.

Operative Treatment.—This is indicated in both the acute and chronic condition; in the acute condition when pain and profuse discharge are present and persist, in spite of active non-operative treatment, or when prolonged treatment has been of no avail.

Conclusion.—I have, of course, been unable to give any new treatment, because, as far as I can find, it does not exist; but if I can stimulate the general practitioner and the pediatrician, who have an opportunity to see these cases in the beginning, to keep their eyes open and institute treatment at once, then I believe we shall soon cease to see so many chronic ca es of sinusitis in adults and this paper will not have been in vain.

517 *Medical Arts Building.*

FRACTURES ABOUT THE ELBOW JOINTS.*

By J. L. WRIGHT, M. D., Harrisonburg, Va.

I wish to speak in particular about fractures of the lower end of the humerus, since these are the most frequent and difficult of treatment.

In discussing these fractures, it is important to know something of the formation of the bony landmarks, particularly the epicondyles and epiphyses. There are four centers of ossification, namely: Internal epicondyles, whose center appears at the age of five and unites at eighteen; the capitellum whose center appears in the third year; the trochlea whose center appears at the tenth year; and the external epicondyle whose center appears in the fourteenth year. The latter three unite in the seventeenth year.

Before the age of union of these epiphyses, it is very easy to have a separation of any or all epiphyses with their typical deformities: swelling soon appears so that the landmarks are quickly obliterated, making diagnosis difficult. Skiagraphs are invaluable in making a correct diagnosis. The treatment depends upon the correctness of such diagnosis.

By far the most frequent fracture about the elbow joint is the supracondyloid. In this fracture the lower end of the upper fragment projects forward and the upper end of the lower fragment backward. On attempting to flex the forearm on the arm a definite obstruction is encountered. With the patient anaesthetized most of these fractures can be reduced and the arm put up in flexion, but there is a considerable number of cases in which upon subsequent X-ray examination, the fractures are found incompletely reduced. If left in this condition, limitation of flexion is so marked after union that the patient is unable to get the hand to the head or the mouth. It

*Read before the meeting of the Medical Association of the Valley of Virginia, Clifton Forge, Va., June 4, 1925.

is with this class of unreduced and unreducible cases that we want to impress upon you the excellent results obtained by the open method of reduction.

When X-ray examination shows an imperfect reduction after a conscientious effort at reduction by manipulation, it is well to let the patient rest twenty-four hours, with cold applications to limit swelling. Then incise posteriorly, bring the fragments in approximation, remove loose fragments, close the periosteum with chromatized catgut and put the arm up in plaster at forty-five degrees. A small cigarette drain quickly relieves swelling and makes the patient comfortable. Passive motion is begun at the end of ten days and at the end of eighteen days all dressings are removed and the patient given a small weight to carry to straighten out the arm. By this method there are perfect anatomic and function results and a perfectly satisfied patient.

CANCER PLUS SUGGESTIONS BASED ON SUGGESTIVE EXPERIMENT.

By STEPHEN HARNSBERGER, M. D., Warrenton, Va.
(Recently of Catlett.)

A good many years ago I stumbled on a well scarred old book giving a brief historical sketch of Greenland and contiguous, year-through, ice-clad areas. Among other things of interest, the one constructive to me as a physician was the statement that those ice-bound natives were singularly exempt from tumors, especially cancerous growths. Curious to know why, I determined, to quote, "with this brain I must work." So, spying further, I found that according to their prevailing habit, established through necessity of isolation and seasonal sameness, the inhabitants there subsisted on fish and the fats of land and water animals, with one exception—a kind of moss or lichen which adheres to rock, ice, etc., the only green edible they had, which they ate pretty much like we make use of our salad food products; and that analysis showed that *this moss contained a very small amount of iodine.* At once it came to mind that it must be this iodine content in their ration that protected them from cancer and other tumor growths. From that day, as physicians who know me best, particularly in Washington, can verify, I have urged the use of iodinized preparations in trying to combat this horrible disease so prevalent among other peoples. Use it by inunction to the affected parts; and as compounded at the present time, push it internally. For if it does no good in the way suggested, it will assist in ridding the system of other infections, and to that extent, at least, slow its course towards the sure dissolution. But just use it, or, better, perhaps, have the impressionable patients see to it themselves—the mental obscurity in the effort, by enhancing body resistance, makes it a personal advantage.

It is not possible to give any very lasting effects from its use in such cases because of the limited number of patients under observation; and, besides, the few cases in reach were too far gone to give assured results. Still, the venture encouraged, in fact, it may be said that iodine used locally on hopelessly affected patients greatly modified the local range and helped to mitigate the mental apprehension, as well as the distressing physical discomforts.

An old colored woman, repugnant in appearance and so badly stinking one could scarcely breathe in her room, had an enormous cancer of the uterus which, though projecting out of the vagina, and sloughed off to a great extent, returned to a higher position under the iodine treatment. The odor almost or entirely disappeared, and there was a return of appetite and fairly restful sleep. She thought she was sure to recover, but after a time new destructive activity beyond reach set up and the ending confirmed the history of the disease.

Another, seen and operated on at the University of Virginia Hospital for cancer of the penis, yielded greatly to the local and internal administration of iodine, but he finally succumbed to its ravages.

A third, a woman past middle age, with a cancerous condition just below the left breast, apparently mended nicely to local applications of iodine. This patient also went to Charlottesville on account of a stubborn cough, where it was found the disease was eating away the lung and was beyond the aid of surgery.

Now I simply publish this recital to stimulate, if possible, others properly interested in the welfare of humanity, to give more thought and effort along the lines indicated, for some day some one may hit upon the experimental luck that will really do lasting good to this, at present, hopeless class of sufferers.

In suspected cases, early intravenous iodinized preparations may stay the progress of

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the disease. Or its intravenous use with the same use of mercurochrome, or, in connection with the same use of a different but pure blood at safe intervals under aseptic conditions, together with pushed nourishment, and quiet of mind and body, may lend the hope that will eventually respond in successful experiment. Likewise, there is reason for advising other precautionary measures in this connection: A certain content of the potassium bicarbonate (99.5 per cent pure) *ion* is necessary to fortify and maintain the human system against the encroachment of influenzal affections, rheumatic troubles, tuberculosis and other infections —possibly cancer. The trial can do no harm. A few days' precautionary administration every autumn and spring, cutting down the solid ration and increasing the water intake, is a safe and sane habit for everyone to adopt and follow through life. It is vastly preferable to running the risk of being sick. Not always, perhaps, but far too often, sickness is of one's own making. Conscientiously adhered to, every susceptible person can fortify himself against "taking colds," and the complaints they are known to leave in their wake. Then, why let yourself get sick?

I do not fall to the complacent notion that negatived effort, based on what has been a closed past, is a path worthy the respect of human intelligence. It should, if rightly regarded, inure to increased thought and more determined exploration, investigation and experiment. It is the never-give-up spirit that wins.

Therapeutically, there seems to be a kindly affinity between iodine and the lymphatic function, for when this function deviates from the normal, the local and internal use of iodine and iodinized preparations readily restores the waning or lost action. While this claim is based on approved results essentially useful in evoking human energies, I am willing to grant that it is still confined to a therapeutic pose. Nevertheless, to an observing mind they are of material interest because it windows the fact that violated nature only *sleeps*—that natural vitality has not succumbed. This gives the inspiration and aspiration required to follow the details of unceasing contrivance and effort; and it furnishes impulse to foresight and future, guarded circumstances. For it is the feeling within that will out that encourages; that is, it is in the hospitality the host accords the treatment—the sequence confidence.

Cancer is the futile result of the conflict between waste and economy—and economy is no more than elimination of waste. But will we heed this fact? Ask the experience and teaching of the past? Back of this, nature only rebels when grossly imposed upon. So it is with these local faults and many internal physical defections! May we expect to build surely on the slump in the past that has caused wholesale sacrifice to make these things true? Not if we have learned anything from past history or experience.

When applied to health, economy means elimination of waste, for it is holding of waste in the body tissues and blood and lymph channels which incites to local and systemic default—the sure forerunner of disease. Any detention or retention of refuse will eventually cause irritation somewhere, and this irritation will manifest its presence at the weakest or most vulnerable point; and, if prolonged, is sure to annoy or do worse.

Health depends upon the friendly interchange of waste and repair. Any interference with this compensating equality of function obstructs the forces that renovate and build.

Rational living is the only security against sickness, especially cancer. Nutrition, general and local, is at the bottom of all tissue changes or disturbances. Nutrition, the frontier of safety—the vanguard—carries potential danger at all times. Over-nutrition and under-nutrition are equally potential factors or parents of first functional discrepancy and then of disease. The proximate natural cause is delinquent tissue (cell) function. When this type of patient comes for your care, it is likely he has consulted many others and let the auspicious opportunity of anticipated help unwisely escape.

The lymphatics are the conservators and the glands the watchmen scattered here and there to control, by warnings, any interference with the natural physiologic action, or the initial balk in lymph function This system, on account of its sure and before-danger signaling, makes it take the lead in importance. If it acts, we stay well. If it shunts in any respect, we get sick. To be immuned against cancer we must have a perfectly working lymphatic exchange. Pure blood in unimpeded flow is nature's priceless home-guard against all vagrant, inimical tissue and other physical con-

ditions, local or systemic; the lymphatics, in my mind, are the trusted sewers and the lymph nodes the wideawake signal warning stations. Interrupt the energies of either and you block efficiency, or do worse—bring on disease. First, the environment; then the cell affections; and, by generification, the subsequent degeneration is generalized.

We feel that the greatest hope for the future development of means to prevent or cure cancer lies in the perfection of means for the induction of regional sterility. This, interpreted, urges that we must be keen to detect the initial, inducing evidence of the incipient local or localizing incapacity. We now have convincing proof of many external local changes which point to future cancers and we are endeavoring to make these visible marks of knowledge lodge in the minds of the people and to induce them to act early and confidently in having these ocular warnings removed. "*The better part of safety is discretion.*"

Practically, from bedside knowledge, I am inclined to the opinion that cancer is conditioned on a modified lymph gland action, or due to a disordered lymph, and that the disappearance of these conditions must be entrusted to the conveyance exits furnished by the lymphatic route. To meet this specific requirement, we must impress the basic fact that the prime factor of evil lies, first, in the manner we prepare and take our food; second, the way we masticate it; and the habit of excess filling just because it carries a beckoning relish, is to be guarded against. Better by far to eat too little than to consume more than the system needs, for in the former case the emunctories are rested, grow stronger and we are given a chance to renovate and keep clean. A thoroughly working sewer system seldom affords points suited to the lodgement of irritating or menacing changes leading to cancer.

Applied to health, economy means elimination of the waste in the body tissues, the blood and lymphatic channels which incite to local and systemic defection, the sure forerunner of disease, *unless corrected early.* Any detention or retention of body refuse will eventually cause irritation somewhere, and this irritation will manifest its presence at the weakest or most vulnerable point, and, if prolonged, is certain to annoy or do worse.

The consumption of much meat must be considered harmful; it is unfavorable to long life, nor is it necessary to sustain either mental or physical vigor or animal heat. Besides it is a fact that when we eat meat we take into our systems animal waste products, substances which become poisonous in the human body, unless they are cast out readily and fully. So it is plain that an extra tax is occasioned on the lymphatic machinery, and, if not removed, we must suffer the consequences. Almost certainly there is clogging of the circulation. The excess fullness overtaxes not only all the principal organs, but inevitably similarly freights the lymphatics. In other words, it aids to make life a continual "Blue Sunday" because it disturbs osmotic force. Nor should we forget or overlook the present-day demineralized and devitaminized cereal foods, flour particularly, which does not nourish, but forms noxious gases, which in turn poison the human system, expressing themselves in many devious ways. These upset the metabolic processes, and disease results. These gases, we are led to believe, by inhibition, or otherwise, are largely the precursor pioneers of the cancer settlements, through selective action. This is a plausible inference and may be found to rank higher as a causative factor. Our faint attitude towards cancer has in the past enervated us like "spiders in the vault their many webs have spread."

An inquiry was made of the Metropolitan Life Insurance Company of New York, to settle the notion that possibly the fats consumed by ice-bound people had some influence in immunizing them against cancer and that the disease in other sections took hold on the lean more frequently than the obese. Information received from them shows the opposite conditions and therefore leaves iodine as the tentative potent immunizing agent—until further light sustains or nullifies its assumed virtue.

J. W. Turrentine, Ph.D., U. S. Department of Agriculture, Washington, D C., says in substance: "On account of the iodine deficiency in our foods the majority of the populace suffer from some degree of thyroid derangement." He has demonstrated that iodine can be furnished such persons by feeding them on certain marine plants or seaweed, which are accompanied by a series of sea-salts and other mineral elements essential as body constituents whose absence may give rise to other deficiency

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diseases than goiter."* This only helps to confirm the view I have always held that iodine is a necessary ingredient of the perfect diet, and next to water it is the cardinal ingredient in warding off all or nearly all deficiency diseases. It is the inciting force that directs and maintains the human house-cleaning.

A logical agitation of the matter through the ardent effort of many contrary opinions is the only way to focus the light that will avert this one human woe.

"Accuse not nature! she hath done her part;
Do thou but thine."—*Milton.*

When research discovers the secret of cell immunity cancer will cease to trouble us. This is my point of view. Let us have fusion of interest and effort.

Local cancer is easily avoided, just as tuberculosis is. These days, any one who is so remiss in care for himself and family as to have either, gets only what he deserves brought on himself. This is established fact.

THE SURGICAL RELIEF OF CERTAIN PAINFUL CONDITIONS.*

By HARRY HYLAND KERR, M. D., C. M., Washington, D. C.

The realm of modern surgery has enlarged greatly since its birth with Lister's discovery in 1865. Every region and cavity of the body has been invaded. Now general surgery is fast being split up into many specialties. Perhaps the latest and most interesting of these is that branch devoted to the surgery of the nervous system. Many of us think of neurological surgery as the surgery of tumors of the brain or of fractured skulls, but I am tempted to call your attention to the various surgical procedures on the nervous system that may be of great value on certain painful lesions not otherwise easily relieved.

Pain is the most outstanding symptom met with in all the field of medicine. It is Nature's call for relief and demands immediate response. It is transmitted to the cerebral cortex by the sensory nerves of the central nervous system. It may be transmitted by the sympathetic system. Visceral pain is undoubtedly so transmitted. The sympathetic nerves are the only ones found in the viscera and must transmit the pain which is so common a symptom of visceral disease. There is growing evidence that peripheral pain from the limbs may be in part transmitted by the sympathetic system. At least, severance of the sympathetic pathways to a limb may abolish certain types of pain in that limb.

The surgical relief of pain necessitates surgicial attack on the pain pathways. The severance of the sensory tract leading from the affected nerves to the cerebral cortex is demanded. Interference with the pathways distal to the lesion is futile. Thus resection of the peripheral nerves leading to an area at which pain is felt in a case of spinal cord tumor has no effect on the pain. This is true of all types of pain but one. Paradoxically it is not true in tic douloureux. Here the successful injection or the severance of the affected branch of the ganglion in which the pain is felt, gives immediate relief. The relief only lasts, however, until the particular branch regenerates. Then all the pain recurs, often in an exaggerated form.

The cure of tic douloureux is one of the most brilliant contributions of neurological surgery. The diagnosis is usually easily made. The patient is in the fifties or sixties and tells the characteristic story of attacks of stabbing, lightning-like pain over the distribution of one of the branches of the gasserian ganglion, over the forehead, in the cheek and upper lip, or in the jaw. The attacks become more frequent and more severe until all the branches of the fifth nerve are affected and the patient is reduced to a pitiful state. He cannot talk or eat for fear of starting an attack and begs for relief. There are many other types of pain in the face and their differentiation from true tic douloureux may be difficult. The therapeutic test of nerve injection will however clear up the question. If the complete blocking of the fifth nerve branch to the painful area relieves the pain, the diagnosis of tic douloureux can be made with certainty. Complete relief of the agonizing pain can be obtained by two surgical procedures, injection of the affected branch with alcohol, or division of the root of the ganglion. Though the first is much easier and much simpler and is usually selected by the patient, the relief is only temporary and the procedure has to be repeated.

The operation of the division of the ganglion root has now reached a place of near perfection. The risk is no longer what it was when the ganglion itself was avulsed and the

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mortality should not be greater than 1 or 2 per cent. The skull is opened through a small trephine opening under the temporal muscle. The dura is stripped up from the base of the skull till the ganglion is reached. The root is divided or avulsed with little risk. I advise all my patients to be operated on, but most of them demand injection at the first visit. When their pain returns and they submit to operation later, they always regret not having followed my suggestion of operation at first. They must be told of the anesthesia that will ensue and should be warned of the danger to the eyes and the necessity of wearing goggles in the open air for several months. I always put each case in the care of a competent ophthalmologist who follows their progress for at least six months. There are no more grateful patients than those who have been cured of the torture of tic douloureux by resection of the ganglion root.

The most outstanding type of peripheral pain is the so-called causalgia of Weir Mitchell. Fortunately it is rarely seen in its true and fulminant type. In 500 cases of peripheral nerve injury under my care at the Walter Reed General Hospital after the War, I saw only one true case. I will never forget the picture of the thin, emaciated soldier huddled under a blanket on a stretcher and holding his wasted right hand with his left. He had not slept naturally for months and was in too great agony to eat or think of anything but his pain.

There are, however, many so-called cases of causalgia of much the same etiology but of much less severity. In partial lesions, especially of the sensory nerves, as the median, pain is a prominent symptom. It may be slight but constant, or it may be severe enough to affect the general health of the sufferer. As these partial lesions slowly but steadily proceed to a spontaneous recovery, the pain gradually subsides. When it is severe and in cases of true causalgia, only one course is to be recommended. The nerve should be divided proximal to the lesion, and immediately resutured. Neurolysis or alcoholic injections are only a waste of time. Here again, surgical relief is magical.

When the pain arises outside the nervous system and is not amenable to surgical attack on the lesion itself, cordotomy is of great value. The older operation of division of the posterior roots will, I believe, be supplanted by this valuable operation. In cases of irremovable tumors, especially involving the lower spine, also in cases of spinal injury involving the cauda equina, and in the crises of tabes, it is indicated. Frazier has shown that the anterolateral tracts, the principal ascending pain pathway of the spinal cord, can be divided with complete relief of pain and without affecting the other tracts of the cord. Through a high laminectomy, the anterolateral tracts of the spinal cord are severed with a small knife.

The sensation of touch and the thermal sense is not abolished, but all painful stimili are completely cut off from the sensorium.

In recent years the sympathetic nervous system has attracted the attention of the medical world and, as in other fields, surgery has helped to unravel some of its mysteries. Hunter and Royale have shown that the sympathetic nerves have a part in the enervation of muscle. In selected cases of spastic paralysis much improvement is claimed to be obtained by surgically severing the rami-communicantes, between the sympathetic cord and the peripheral nerves to the affected limb.

Another function of the sympathetic system is the trophic control of the periphery.

In Raynaud's Disease, when symmetrical gangrene, accompanied by pain, is the characteristic symptom, relief is obtained by the so-called Leriche Operation. The main artery of the limb is exposed and the adventitia is dissected off the vessel for a distance of several inches. As the sympathetic fibers pass in the adventitia, its removal cuts off the distal parts from sympathetic control. Complete relief of pain is thus brought about with the arrest of the gangrene. Leriche advocated his operation for relief in other painful lesions such as the so-called causalgia referred to above and in intermittent claudication. The results, however, have not borne out his early hopes.

Raynaud's Disease, scleroderma and erythromelalgia are apparently the most susceptible lesions to this procedure. There is produced by sympathectomy a definite effect on the capillary circulation. It has been shown that the temperature of the part is elevated and the capillary circulation definitely increased. This effect is enhanced when the Leriche Operation is combined with division of the rami-

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communicantes. In a recent case of endarteritis obliterans, when a simple Leriche operation had failed to help on one side the combined Leriche operation and the Royale operation brought cessation of pain and prompt healing of the ulcers. These procedures probably act through paralysis of the vasoconstrictors. The contraction of the vessels is prevented and increase in blood flow to the part is enhanced.

The control of the vasoconstrictors by the sympathetic has recently been applied to the surgical relief of angina pectoris. The rationale of the operative procedures used is based on Sir Clifford Allbutt's theory of the nature of angina pectoris. Contrary to the older teachings, he believed that the disease is primarily in the first portion of the aorta and that the heart itself or its coronary arteries may be entirely uninvolved. The characteristic lesion is an aortitis involving the outer, rather than the inner coats of the vessel. Through the nerve fibers of the cardiac plexus, the aortitis sets up a reflex spasm of the aorta when subjected to strain. The root of the aorta first feels the brunt of increased heart action and the nerve fibers in its adventitia are irritated. Through the afferent nerve tracts this irritation stimulates the centers in the cord or the medulla. Through the efferent fibers the muscular walls are thrown into contraction. The subjective manifestation of this spasm is the agonizing substernal pain referred down the left arm. It is probable that the pain always accompanies a contraction of the vessel. The attacks can be arrested and relief obtained if the vessel is made to dilate. Clinical experience indorses the theory, in that the most efficacious drugs used during the attacks are the vasodilators as nitroglycerine and amylnitrite. As these drugs relieve the attacks, surgery has attempted to prevent them. As the attack is the manifestation of an aortic spasm, the result of a physiological reflex, it can be prevented by dividing either the efferent or the afferent fibers of the reflex arc.

The heart is enervated by the superficial and deep cardiac plexuses with their branches, the anterior and posterior coronary plexuses. The superficial cardiac plexus is made up of the left superior cardiac nerve from the left superior sympathetic ganglion and branches from the vagus and filaments from the deep cardiac plexuses. It is distributed to the base of the aorta, the atria, and the anterior coronary plexus. The deep cardiac plexus is made up of other cardiac nerves from the right and left sympathetic ganglia and the vagi.

A greater part, if not the greatest part, of the nerve supply of the root of the aorta is from the superficial cardiac plexus. The sympathetic portion of this plexus comes principally from the left superior cervical ganglion through the left superior cardiac nerve. This nerve, therefore, plays a large part in the sympathetic enervation of the first portion of the aorta.

The depressor nerve is considered an afferent nerve of the heart. In the rabbit it occurs as a separate nerve, but in man its anatomical identity is not clearly made out. Hofer, in describing his operation of the division of the depressor nerve for the relief of angina pectoris, advises the resection of all branches of the vagus and superior laryngeal nerve passing into the thorax. Stimulation of the depressor nerve uniformly causes a drop in blood presure in experimental animals. If it acts in the same way in man it is probable that the depressor nerve is included in the human vagus sheath, since irritation of the vagus near the base of the skull produces the same phenomenon. Division of either of these nerve tracts, the sympathetic or depressor nerve, would theoretically interrupt the reflex arc connecting the heart with the central nervous system.

Francois Franck suggested division of the sympathetic nerve tracts to the heart for the relief of angina pectoris. Wenckebach suggested division of the depressor portion of the vagus with the same object in view. Both procedures have been carried out in a limited number of cases with results encouraging enough to tempt us to continue our surgical efforts to relieve this terrible malady.

I reported eight cases before the American Surgical Association operated on by the so-called American operation, that is, superior cervical sympathectomy under local anesthesia, in contra-distinction to the Jonnesco operation of removal of the entire cervical sympathetic chain. My experience with the study of some sixty cases from the literature leads me to believe that this simple operation which has no risk and leaves little or no disability is eminently worth while.

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THE ROLE OF NUTRITION IN TUBERCULOSIS PREVENTION.*

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It is with somewhat of a painful pleasure that I am with you this morning. I appreciate the compliment implied in your invitation; yet such is my respect for the word science, that I feel quite humble. The only contribution I can hope to make to your deliberations must be drawn from observations in a field in which knowledge is as yet imperfect, and in which the beliefs of today must be ready for disavowal in the light of tomorrow's discoveries.

The word "nutrition" is used in this paper in its actual meaning, and refers to "proper food for tissue building." There is a method for dealing with the conditions of malnutrition which is widely discussed under the term "nutrition work." This method includes correction of physical defects, discipline, proper rest, proper food, and proper hygiene. All of these factors are essential if we are to establish balanced metabolism, and any method for securing proper nutrition must include them all. The nutrition class method is a valuable contribution to health work. Fully appreciating the implications and importance of the other factors, I shall, however, exclude from our consideration all factors concerned in the method, save food alone.

The problem of nutrition is of paramount importance in the campaign against tuberculosis because of the very nature of the body's method of combating the disease. It is now recognized that 75% of tuberculous infection occurs prior to the fifteenth year, whereas the highest disease-incidence occurs much later. As soon as definite infection takes place, the body endeavors to wall off the bacilli behind a calcified barrier. Whether or not this barrier holds is in large measure dependent upon the stamina of the individual—what we call the power of resistance. Many factors tend to lower this defensive power; worry, lack of mental discipline, overwork, concurrent illnesses, and so on. The strain of life is a force which hammers and hammers against the barriers; when the force becomes too strong, the wall is broken, out sweeps the enemy, and disease begins. Everything, therefore, which tends to keep the body strong in its defense line is a preventive agent. Among the other factors, those which build body tissue, or are fundamental in maintenance of body metabolism, are, naturally, of chief importance. Among these, fresh air, without which metabolism cannot be maintained, and food, are the two essentials.

Since infection occurs in childhood, tuberculosis enters when the organism is already burdened with the necessities of body growth. It must select from the food the calcium for wall-building, and from it, also, must be drawn materials to develop the defensive power for disease resistance. Throughout life the latter requirement continues. Knowledge of foods and their functions is power against disease.

The first scientific ideas regarding diet were based upon knowledge of the chemical elements of food and the chemical demands of the human body. Since in energy expenditure and tissue destruction, certain chemical elements were altered or lost, a diet which replaces these elements will maintain the body at a uniform average. This thought gave confidence in proteids, carbohydrates, fats, and mineral salts as the only essential factors in food. This belief held almost undisputed sway for more than half a century. Diets were organized on the theory that proteids were required for tissue building; carbohydrates for energy production; fats for heat; and mineral salts for various essential body functions. Not until after 1900 was it suspected that the proteids differed in metabolic value.

By 1900 one important modification in diet teaching had been developed. By exact experimentation with the calorimeter, Atwater and others had determined the caloric food values necessary to supply energy requirements under several varying conditions. The basal metabolism requirement for a man of average weight, from 150-160 pounds, was found to be approximately 1,680 calories in 24 hours. The caloric requirements under conditions of muscular activity, with differences as slight as those between a reclining or a sitting posture, were demonstrated. Moderate work raised the basal metabolism requirement of the same individual to 3,000 calories in 24 hours; while hard manual labor made the total energy requirement as high as 5,000 calories. The caloric requirements during the period of growth were more difficult to estimate, and have been variously placed. For growth alone, excluding metabolism, five to ten food calories per pound

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of body weight, is considered to include a margin of safety. Dr. Taliaferro Clark, of the United States Public Health Service, has said, "The total caloric requirement of children of both sexes during the adolescent period is approximately one thousand calories greater than that of grown men or women."

For several years the caloric food value, together with sufficient protein intake to replace body tissue, was considered the whole story. Shortly after 1900, experimentation with animals to establish whether a single food stuff or a varied diet gave better growth and nutritional results disclosed the fact that with a diet perfect from the chemical and calorie standpoints, cattle not only failed to thrive, but actually died. These experiments clearly demonstrated the presence of substances other than those which had already been analyzed in the four major food constituents. Funk, in 1910, experimenting with polished rice as the cause of beri-beri found that the disease was prevented by feeding the husk of the grain, and stated that there was evidently some substance not yet isolated which existed in the bran layer and which protected against the disease. To this substance he gave the name "vitamine."

Animal experimentation immediately followed, and in 1915 McCollum and Davis recorded their findings with butterfat and egg yolk. Within a few years, Fat Soluble A and Water Solubles B and C were demonstrated, and others are dimly discerned. It is now known that lack of Water Soluble B not only causes neuritis, but also greatly lowers the vitality. Water Soluble C prevents scurvy and greatly aids in resistance to disease. For our purpose this morning, Fat Soluble A is perhaps of most interest, since lack of it not only prevents growth but interferes with the mineral, particularly the calcium, metabolism. It is, too, a factor in creating disease resistance.

As each of these discoveries in food composition—the chemical content, the caloric value, and the presence of unisolated substances named "vitamines"—has been made, the tendency has been to overlook the importance of the preceding steps towards knowledge of the science. Such a tendency is to be deplored. The development, as is usual in scientific evolution, has been a process of steps and unfolding. The knowledge of yesterday has its place in the whole just as much as has the knowledge of today. It is unscientific to emphasize one set of facts, and to ignore another.

Since Fat Soluble A was early shown to influence the calcium metabolism, one would naturally hope to find that further experiments had demonstrated its power in tuberculous disease. Unfortunately, however, all animal experiments so far reported have been negative in their results. Experimental work on infected guinea pigs failed to prove cod-liver oil "definitely beneficial either as regards weight curve, length of life or extent of the disease process." It is interesting to note the presence of Fat Soluble A in milk, egg yolks, and cod-liver oil, each of which has at different times had great vogue in the treatment of that disease. There seems to be a body of clinical evidence that Fat Soluble A, together with calcium, is beneficial in the early stages. Common sense suggests that this should be so. Experimentally it has not yet been demonstrated. It may be found, as has been suggested, that an agent having beneficial effect in the non-tuberculous organism becomes useless in the tuberculous because of the overwhelming nature of the infection.

Regarding diet Dr. Pottenger says, "What we would like to find out for the tuberculous patient is, does he have any specific requirements; are there any forms of diet that will aid him more than others in overcoming his disease? The question is one that so far has not been properly answered."

Although the question of diet as a determining factor in the cure of tuberculosis has not yet been answered, its place in the prevention of disease can with some accuracy be defined. It would be unwise to speak with finality in a science which has seen such amazing discoveries within a decade, yet sufficient experimental evidence is available to assure us that a secure starting point has been reached. The general application of our existing knowledge regarding the essential content of diet for body growth and disease resistance should give startling results in the prevention of tuberculosis in the next generation.

Any effort to apply scientifically balanced diets for this purpose would have to begin in the group of children now suffering from malnutrition. In this group are to be found the majority of our future consumptives. An "optimal" dietary for these children would include a sufficiently high protein value to carry

on the regular functions of the organism and, in addition, to repair and to build the child's body. The caloric value would have to be sufficient to conduct the business of the body while the process of growth was proceeding, and, in addition, to supply fuel for the excess energy always manifested by the normal young. The vitamine content would have to be sufficient to promote growth, to ensure mineral metabolism and disease resistance. Mineral salts for essential functions would have to be assured. It is of interest to see how far such a diet is now utilized for the benefit of the malnourished. The data our Board has available is not sufficiently detailed for scientific use, yet it may give valuable indications.

During the past year, our nurses filed fifty-seven weekly reports of nutrition classes of twenty or more children. The low daily caloric value of the diet of these children was a surprise. In only one of the ten classes conducted by us was the average caloric food value as high as 2,200 at the time of the first class period: 31 of the 57 reports showed that the diet of one or more children had a caloric value under 1,500. Two children were reported on a diet under 1,000 caloric value. The average for all classes was only 2,436, in spite of the fact that in each class the caloric value crept up steadily throughout the four months of class instruction.

An effort to ascertain the vitamine content of the diets was complicated by the fact that the investigation was begun after the children had had sufficient class work to influence their food choice. Only one investigation was begun sufficiently early in the work to be uninfluenced by detailed instruction. Here it was found that in a class of twenty-two children, only seven drank milk; that none of the class had green vegetables with any regularity; and that none had fruit. They were, therefore, practically without the foods in which the vitamines are sufficiently concentrated adequately to furnish a growing body.

These classes were held in consolidated schools; and the children, because of the area covered by the school, often started from home at eight in the morning and returned somewhat after four in the afternoon. Provisions for hot food were made in only two schools, and in none was there supervision of the children's lunches. These facts induced several injurious diet factors. Insufficiency and irregularity were added to the factor of monotony caused by the lack of provision for green foods for winter use on the farms. Loss of appetite, produced by the condition of malnutrition, combined with these several injurious factors incident to school life, caused a vicious circle. McCollum has said, speaking of the results of much less seriously unbalanced diet in young animals, "Adherence for even a brief period of a few days or weeks to a diet which is unsatisfactory in some degree, leads to deviation from the normal histological structure of the osseous, the nervous, or the circulatory tissues, depending upon the nature and extent of the faults in the food." Conceding the greater length of the life cycle in the human race, such faulty dietaries as have been found in our rural population must indeed seriously affect the body structure. The evidences of such effects were plain to see in the misshapen bodies and pale faces of the children in the nutrition classes. It was apparent that among these children, food had not been used with sufficient intelligence to promote normal growth. For our general population the distance from the "normal" diet which permits the development of a normal body structure, to an "optimal" diet, which will give a well-developed, vital, disease resisting organism, is a long one.

The extent of malnutrition among our children makes the problem exceedingly difficult. In four schools in which the State Board of Health last year weighed and measured all the pupils, one-third of the children were seven per cent or more underweight. A careful physical examination of the children of normal weight disclosed the fact that fifty per cent of the group showed the signs of malnutrition—flabby muscles, slight curvatures, and so on. These findings unfortunately tally with more extensive investigations conducted elsewhere. In the correction of such conditions, two official bodies are vitally interested, the Boards of Education and of Health. In the former, a small force of 67 domestic science teachers are the advance guard of what should be developed into an adequate state-wide force. In the Board of Health, the Bureau of Child Welfare is continuously active and the force of the Tuberculosis Education Bureau conducts intensive work during winter months.

It has been charmingly said that "The forward and upward march of all knowledge, of all science, depends on the discovery and per-

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fection of method." It is true in nutrition. The only method already devised is, while effective for city work, far too costly and too complex to succeed among our rural population. The successful method must, of course, rest upon a foundation of informed and educated individuals. We have apparently reached only the first stage: acquisition of certain accurate knowledge, investigation of existing conditions, and experimentation with method.

In closing, I wish again to state that no one factor, whether it be proper hygiene, proper rest, or proper diet, will by itself produce a normal organism. Discoveries in nutrition, however, are so recent and so revolutionary that emphasis must at this time be placed upon its function in building and maintaining a strong, vigorous organism, well equipped for disease resistance. Such an organism would, when tuberculosis infection occurred, readily handle it, walling it off behind calcified barriers, and frequently completely destroying the bacilli. Disease resistance produced by the development of such vigorous, vital organisms would continue high throughout life. When the strain of life grew strong, powerful forces would be prepared to meet it. Success in the field of teaching nutrition will mark a long stride forward in the conquest of tuberculosis.

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State Office Building.

ANALYSIS OF EIGHTY-FOUR DELIVERIES.

By HAROLD NEIFELD, M. D., Brooklyn, N. Y.

From the records of the Holy Family Hospital the following statistics and conclusions have been compiled. They are presented for whatever of value or interest they may have for the practitioner.

One maternal death occurred in an Italian primipara who had entered the hospital with a potential infection, having been examined vaginally in her home ten or eleven times by a midwife and several times by a physician. In her case labor commenced on October 30, 1924, and as labor had not progressed on November 2, 1924, it was decided to terminate the pregnancy mechanically despite evidence of infection. She had a contraction ring that would not relax under ether, and, upon cessation of the fetal heart sounds, craniotomy was performed. The patient died ten days later of embolic pneumonia. The other maternal death was in an old cardiac that had been treated for that affliction by an internist during her entire pregnancy. An attempt was made to terminate labor by forceps, and, though she was delivered of a normal baby (that is living now), she died on the table. Not only was this patient a chronic cardiac, but, in addition, this was her first delivery at the age of thirty-five.

Of the fetal deaths one was the craniotomy case mentioned above. Another a premature infant of seven months, weighing four pounds and two ounces. A third was a breech in which the aftercoming head was delivered with great difficulty. (This occurred in a gravida

TABLE I.

	No.	SEX		DEATHS		Twins	Av. Labor	For-cep	Placenta Praevia	PP. Hem.	Cord Around Neck	Fetus Papyraceus	Macerated Fetus	Contraction Ring	Craniotomy
		Male	Fem.	Fetal	Mat.										
Multipara	48	24	25	3	0	2	10¾	2	0	0	4	1	1	1	0
Primipara	36	19	20	2	2	2	14½	2	1	1	5	0	0	1	1
Total	84	43	45	5	2	4	hrs.	4	1	1	9	1	1	2	1
Total per cent		49	51	5½	2⅓	4½									

two that had been delivered the year previously of a dead forceps baby). The fourth case was that of a woman who had had five miscarriages. The fetus was macerated; but in spite of this history, a saddle-back nose, general glandular enlargement and type of woman, repeated laboratory tests were negative for lues.

Three of the four sets of twins presented single placentae, two sets of which were males, one set females. The fourth set of twins was followed by the expression of a double placenta; and in this instance the twins were of different sexes. For some reason not ascertained, the female died shortly following delivery. In one of the single placentate cases the presentations were R. S. A. and L.S.A. in another L.S.A. and R.O.A., in the third R.O.T. and R.O.P. In this last forceps were applied to the R.O.T. fetus, converting it into an R.O.A. and delivering it with two tractions of the blades. The R.O.P. fetus was delivered by version and extraction.

Application of the forceps in one instance showed a maternal death (cardiac case referred to above), in another a fetal death. Two other mothers were delivered by its means of normal living babes with no fetal or maternal mortality.

Though one postpartum hemorrhage is here recorded, yet none has ever been listed at the Holy Family Hospital in any event where the medical man has observed the house rule of waiting at least fifteen minutes before attempting to express the placenta. In the case cited, the physician attempted expression a few moments following delivery.

Nine babies were born with coils of the umbilical cord about the neck. In one infant there were two coils wound round its neck; in another the cord was loosely knotted. There was neither maternal nor fetal mortality.

Following the expulsion of a well-formed, living, six pounds four ounce female a multipara expelled the placenta with a typical fetus papyraceous. A sister of this patient was delivered of a baby with hemorrhagica neonatorum. The baby bled from all mucous surfaces. Maternal blood was injected subpectorally and intra-abdominally. The result was a live child, the bleeding having ceased completely in twenty-four hours. (The infant had also been given grain five calcium lactate q. 4 h., alsohol minim ten q. 4 h., and diluted milk).

One of the two patients who presented a contraction ring that did not relax under ether had a craniotomy performed (mother was infected) on the fetus; in the other, which also did not relax under ether, administration of the chloroform produced complete relaxation with no mortality to mother or child.

Four of the women seen in the outpatient department before active onset of labor had blood pressures of over 200 systolic, and were carried safely through labor by bleeding, diet and rest.

The average weight of male children was 7.7 pounds, of the females 7.3 pounds.

The average weight of babies with first degree lacerations was seven pounds eight ounces, of babies with second degree lacerations eight pounds four ounces, of babies with third degree lacerations seven pounds eight ounces. All patients with lacerations in whom babies weighed less than seven pounds had labors all over eighteen hours long.

No case of pelvic infection in a pregnant woman was seen by the observer in the institution during the period of eight months that he had been connected with it, except in those that had previously been examined vaginally outside its walls. No vaginal examinations are permitted except for some special indication.

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TABLE II.

	Presentations		Deaths		Lacerations		
	Number	Percent	Fetal	Maternal	First	Second	Third
LOA	41	47	2	1	9	4	0
ROA	28	32	1	1	9	2	0
Breech	12	14	2	0	3	3	1
ROP	3	3	0	0	1	0	0
LOT	1	1	0	0	0	0	0
ROT	1	1	0	0	0	1	0
LOP	1	1	0	0	1	0	0
RMA	1	1	0	0	0	0	0

TABLE III.
Lacerations*

	Primipara	Multipara
First Degree	8	16
Second Degree	6	4
Third Degree	1	1

*Of the primiparae 3 of the 8 with first degree lacerations bore children with coils of the cord around the neck; of the 6 with second degree lacerations 2 were forceps cases and one a breech; the third degree laceration case was a forceps.

The 16 first degree lacerated multiparae had numbered among them 6 with old scarc that reopened, 2 with coils of cord around the neck and one breech; while there were one forceps and two breeches (one of these had the aftercoming head delivered with marked difficulty) among the four second degree lacerated multips; and the multipara with the third degree tear was a high forceps.

Summary

1. Vaginal examinations are dangerous. Use abdominal palpation and finger rectally.

2. Contraction ring cases that do not relax under ether should be subjected to chloroform.

3. The longer the labor the greater the liability to laceration; the heavier the baby the greater the liability to laceration; instrumentation produces laceration; abnormal presentation increases the liability to laceration; lacerations occur in about the same percentage in primiparae as in multiparae.

4. Single placenta twins are of the same sex; double placenta twins of different sexes. Twins produce abnormal presentations in about 75 per cent of the cases.

5. Fetal deaths increase with abnormalities, i. e., contraction ring, premature deliveries, breech presentations, etc.

6. Postpartum hemorrhage can be avoided by waiting at least fifteen minutes before attempting to express the placenta.

7. Hypertension cases can be successfully carried through labor by bleeding, diet and rest.

8. Male children at birth weigh slightly more than females.

9. A slightly greater number of females are born than males.

Conclusion

Most of the salient points in the above summary are merely confirmatory of those of the recognized authorities in obstetrics, a few are in contra-distinction to their teachings; yet it is hoped that this report will stimulate similar ones from the smaller clinics. In this way we can see how the results in the lesser lying-in institutions compare with those of their big sisters.

243 *Hewes Street.*

School Insurance, Switzerland.

Compulsory insurance of school children, established within recent years in various Cantons of Switzerland, was recently adopted in the Canton of Geneva. The law provides for compulsory insurance against disease and accident for all children from three to fifteen years of age attending kindergartens or public schools. The insurance fund pays three-fourths of the cost of medical care for the children and of maintenance in the country when required. The resources of the fund comprise the premiums paid by the parents and subsidies from the Federal and cantonal governments.

Correspondence

No Reduction in Railroad Rates for Richmond Meeting.

To the Editor:

It will be noted, in review, that we were given reduced rates to the Norfolk meeting, after extended correspondence resulting in less than one hundred of the required number to give us these rates under the railroad rules. By the greatest effort, we were given another trial with reduced rates to the Roanoke meeting. As chairman of the Transportation Committee, I urged every doctor attending to buy a ticket giving the reduced fares, and those having passes to buy tickets for their wives and daughters, as this was to be a final test to get the required 250 tickets which guaranteed reduced rates in the future. I was disappointed at results, for I found many doctors at the meeting who never asked for the reduced fares, and every one who had a pass, got others for their families, and, as a result, about sixty-five tickets were sold to Roanoke.

Seeing that we were not to get reduced rates directly to our members, I next urged meetings to be held at the same time Fairs were held in the largest cities, and thus get reduced rates for those doctors in the outlying part of the State; but while the Society at the Staunton meeting voted this be done, the Executive Council has reversed this act. Without reduced fares, the meetings are meetings of the surgeons of the railroads, and a few near the place assembled, and not the Medical Society of Virginia as it should be.

While attending post-graduate work (dermatology) in New York City, I arranged a conference with Mr. C. M. Burt, chairman of the Trunk Line Passenger Association. This embraces most of the eastern part of the United States and controls rates in most of our State. After running the gauntlet of several underling offices, I was given an audience with the chairman. I found him affable and sympathetic but only looking at the net result of various policies, in dollars and cents. I showed him how the railroad policy was dividing the profession into two camps, those for and those against the railroads. I did this after giving the former policy of giving us reduced fares at every meeting. He admitted the opposition developed in the medical profession, but he stated that while they would lose by this opposition in our profession, yet, as there were so many other organizations in like position, the railroads would profit more by making no exception in our case. An hour's argument showing how it worked a greater hardship on us, failed to change his views and, as his will was law in the premises, I thanked him for his kindness and left.

As it is utterly impossible to ever get 250 doctors to buy tickets (so many who go have passes), again let me urge the Society to meet only in cities at Fair dates and thus give doctors in limited circumstances an opportunity to attend these meetings in the future. For those able to pay full fares, and those who have passes, to continue a policy that is derogatory to the great interest of the Society as a whole is selfish, if looked at straight and, if done without proper thought, is folly in the full meaning of the word.

Respectfully submitted,

J. Beverly DeShazo,

Chairman of Transportation Committee.

Ridgeway, Va.

August 8, 1925.

Proceedings of Societies

The Medical Examining Board of Virginia

Held its regular semi-annual meeting in Richmond, June 23-26, inclusive, at which time ninety-eight doctors applied for license to practice in this State. Twenty were licensed by reciprocity, seventy-eight taking examinations. There were no failures. The bulk of those applying for licenses were from the Virginia schools, there being thirty-five from the Medical College of Virginia and twenty-five from the University of Virginia. Appended is the complete list of those who were granted certificates to practice in Virginia, with their addresses:

Dr. Sheppard K. Ames, Belle Haven, Va.
Dr. Frederick T. Amiss, Luray, Va.
Dr. Mallory S. Andrews, Norfolk, Va.
Dr. Dudley C. Ashton, Richmond, Va.
Dr. Maurice B. Bangel, Portsmouth, Va.
Dr. Frederick P. H. Barrow, Portsmouth, Va.
Dr. George Wythe Booth, Ferrum, Va.
Dr. Thaddeus R. Bowers, Bristol, Tenn.
Dr. Lemuel R. Broome, Charlottesville, Va.
Dr. Fred A. Brown, Richmond, Va.
Dr. Charles P. Cake, Charlottesville, Va.
Dr. Roscoe D. Campbell, Abingdon, Va.
Dr. J. Theodore Canaday, Norfolk, Va.

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Dr. Adrian L. Carson, Jr., Richmond, Va.
Dr. Douglas G. Chapman, Woodstock, Va.
Dr. Creed F. Cherry, Norton, Va.
Dr. John A. Coleman, Richmond, Va.
Dr. Julian H. Coleman, Penola, Va.
Dr. Anthony A. Colletti, Norfolk, Va.
Dr. Robert W. Dailey, Jr., Romney, W. Va.
Dr. Joshua M. Dougherty, Jr., Nickelsville, Va.
Dr. Howard L. Dovey, Everett, Pa.
Dr. John W. Durden, Herndon, W. Va.
Dr. Ernest T. Eades, Roanoke, Va.
Dr. Porter B. Echols, Glasgow, Va.
Dr. Richard C. Eley, Charlottesville, Va.
Dr. John B. Faison, Charlottesville, Va.
Dr. Robert E. Feagans, Charlottesville, Va.
Dr. Ora M. L. Fisher, Washington, D. C.
Dr. John E. K. Flannagan, University, Va.
Dr. Robert A. Follweiler, New York, N. Y.
Dr. Haswell D. Franklin, University, Va.
Dr. John Garner, Woodlawn, Va.
Dr. Charles D. Garrett, Rocky Mount, Va.
Dr. Robley R. Goad, Jersey City, N. J.
Dr. Andrew S. Graham, Seattle, Wash.
Dr. W. Randolph Graham, Richmond, Va.
Dr. Andrew G. Grinnan, Richmond, Va.
Dr. John E. Hanawalt, New York, N. Y.
Dr. Vernon J. J. Harris, Richmond, Va.
Dr. William T. Harris, Mt. Gilead, N. C.
Dr. Elvin H. Hearst, Bristol, Va.
Dr. Joseph C. Hiden, University, Va.
Dr. Merritt M. Hill, Richmond, Va.
Dr. John A. Hillsman, Jr., Richmond, Va.
Dr. Joseph C. Inman, Jr., University, Va
Dr. Miletus B. Jarman, Elkton, Va.
Dr. Eldred S. Jones, University, Va.
Dr. William M. Junkin, Richmond, Va.
Dr. Warren W. Koontz, University, Va.
Dr. Edith J. Lacy, Vigor, Va.
Dr. Martin Lasersohn, Richmond, Va.
Dr. Robert G. LeFevre, Lancaster, Pa.
Dr. Hyman P. Levin, Erie, Pa.
Dr. Stanton K. Livingston, Greensburg, Pa.
Dr. Adah A. Lotti, Charlottesville, Va.
Dr. Maurice M. Lynch, Jr., Richmond, Va.
Dr. Charlie F. Manges, Roanoke, Va.
Dr. Walter F. Manley, New York, N. Y.
Dr. Ashby G. Martin, Richmond, Va.
Dr. Maurice S. Mathis, Baltimore, Md.
Dr. Goldsboro F. McGinnes, University, Va.
Dr. Clarence N. McPeak, University, Va.
Dr. Edgar M. McPeak, University, Va.
Dr. Omega L. Miller, Vienna, Va.
Dr. Sannie G. Miller, Roseland, Va.
Dr. Sally D. Moon, Charlottesville, Va.
Dr. Dana T. Moore, Oakland, Md.
Dr. E. Franc Morrill, Columbia, S. C.
Dr. Roy L. Mullins, New York, N. Y.
Dr. Frank E. Nelson, Richmond, Va.
Dr. Harry S. Newman, Richmond, Va.
Dr. Vincent H. Ober, Philadelphia, Pa.
Dr. Paul E. Piper, Washington, D. C.
Dr. Charles L. Plunkett, Richmond, Va.
Dr. Thomas R. Pratt, Charlottesville, Va.
Dr. George H. Preston, Richmond, Va.
Dr. Charles L. Quaintance, Washington, D. C.
Dr. James C. Repass, Jersey City, N. J.
Dr. Wiley J. Rollins, Jr., University, Va.
Dr. Robert H. Rowe, Exeter, Va.
Dr. Joseph E. Rucker, Richmond, Va.
Dr. W. Henry Sebrell, Jr., New Orleans, La.
Dr. James W. Sinclair, Toronto, Canada.
Dr. Gladys Smithwick, Catawba, Va.
Dr. John T. Sprague, Warrenton, Va.
Dr. Olga Steinecke, Keystone, W. Va.
Dr. Oscar Tagg, Cape Charles, Va.
Dr. John L. Thornton, Washington, D. C.
Dr. Brenton A. Tilghman, Cape Charles, Va.
Dr. George C. Tyler, Abingdon, Va.
Dr. George H. Warren, Jr., Richmond, Va.
Dr. Samuel Weinstein, Richmond, Va.
Dr. Alfred D. Wetherby, Andover, Va.
Dr. Otis Wildman, Norfolk, Va.
Dr. Hagan E. Wood, Bristol, Tenn.
Dr. Edwin S. Woodyard, Richmond, Va.
Dr. O. G. Allen, New York, N. Y. (in chiropody).

The Southwestern Virginia Medical Society

Opened its semi-annual meeeting at Mountain Lake, August 27, with a banquet at 8 P. M., following which the president, Dr. F. H. Smith, Abingdon, and Dr. J. Shelton Horsley, Richmond, and Dr. A. H. Hoge, Bluefield, W. Va., read papers. Papers in the symposium on "Pelvic Diseases" were read the following day, as also were voluntary papers. At the business meeting held on the 28th, the following resolutions were adopted in memory of Drs. W. W. Chaffin, A. S. Ellett, M. G. Robinson, and A. E Holmes:

Since God in His all wise providence has seen fit to translate from their earthly labors our beloved and esteemed brother physicians, Drs. W. W. Chaffin, Pulaski, Virginia; A. S. Ellett, Christiansburg, Virginia, M. G. Robinson, Wytheville, Virginia, and A. E. Holmes, Salem, Virginia, to their spiritual home—that home whence no traveler returns—BE IT THEREFORE RESOLVED:

FIRST—That we bow in humble submission to him who doeth all things well.

SECOND—That we extend the sympathy of the Society to the bereaved families and pray that God extend to them His mercy and sustain them in their sorrow.

THIRD—That this Society in their passing has sustained an irreparable loss.

FOURTH—That these resolutions be transcribed in the minutes of the Southwestern Virginia Medical Society, published in the VIRGINIA MEDICAL MONTHLY, and a copy sent to the families.

J. A. NOBLIN.
C. F. GRAHAM,
R. H. WOOLLING,
Committee.

Drs. A. M. Showalter, Cambria, E. M. Chitwood, Wytheville, and K. D. Graves, Pearisburg, were appointed delegates to the meeteing of the State Society in Richmond.

The following new members were received: Drs. F. E. Hamlin, Roanoke; Sam R. McDowell, Blountville, Tenn. (associate member); C. D. Nofsinger, Roanoke; J. W. Miller, Pembroke; J. T. Hundley, Jr., Radford; A. B. Grubb, Cripple Creek; C. B. Ransome, Roanoke.

It was decided to hold the next meeting in Roanoke, the last week in March, and the following officers were elected for the ensuing

year: President, Dr. J. M. Miller, Crockett; vice-president, Dr. W. Caudill, Pearisburg; and secretary-treasurer, Dr. E. G. Gill (re-elected), Roanoke.

There were seventy-one doctors in attendance at this meeting.

Augusta County Medical Association.

At the regular meeting of this Association in Staunton, on the evening of August the 6th, no papers were read, but Dr. P. K. Graybill, Fincastle, Councilor for the Tenth District, was present and gave a talk. At this time, also, the retiring president, Dr. David T. Gochenour, of Stuarts Draft, tendered a banquet to the members and guests. There were about thirty-five members present. Dr. A. F. Robertson, Jr., Staunton, and Dr. Harry F. White, Fishersville, were appointed delegates to the Richmon meeting of the State Society.

Officers elected for the coming year are: President, Dr. J. L. Alexander, Staunton; vice-presidents, Drs. Charles W. Putney, Staunton, George Hollar, Waynesboro, and John E. Womack, Staunton; secretary, Dr. H. G. Middlekauff, Weyer's Cave; and treasurer, Dr. T. M. Parkins, Staunton.

At a called meeting of the Association on August 20, Miss Agnes D. Randolph, director of Tuberculosis Education, State Board of Health, gave a talk on "Methods of Conducting Tuberculosis Clinics in Rural Communities," and asked for the co-operation and support of the members.

The special purpose of this meeting was to discuss and consider proper steps for the betterment of dispensary service to the indigent poor of the city and county. After much discussion, a committee composed of Drs. Kenneth Bradford, A. L. Tynes and A. F. Robertson, Jr., was appointed to make investigations and to report at a later meeting.

The Patrick-Henry Medical Society

Held its regular bi-monthly meeting, Thursday, September 3rd, at the "Roundabout Club," near Martinsville. New officers elected were as follows: President, Dr. D. H Mason, Ridgeway; vice-president, Dr. R. R. Lee, Martinsville; secretary-treasurer, Dr. H. G. Hammond, Martinsville.

Dr. J. M. Shackelford, Martinsville, was elected delegate and Dr. J. A. Shackelford, also of Martinsville, alternate to the State Society meeting to be held in Richmond, October 13-16.

G. B. DUDLEY, JR., *Secretary.*

The Truth About Medicine

In addition to the articles enumerated in our letter of June 30, 1925, the following have been accepted:

Eli Lilly & Co.
- Diphtheria Toxin—Antitoxin Mixture 0.1L plus.
- Typhoid Mixed Vaccine, Prophylactic and Therapeutic Schick Test, 50 test package.

H. A. Metz Laboratories
- Neosalvarsan Dose XII.

Parke, Davis & Co.
- Germicidal Discs of Potassio—Mercuric Iodide—P. D. & Co.

Powers-Weightman-Rosengarten Co.
- Bismosol
- Bismosol Ampules 1 c.c.

NEW AND NON-OFFICIAL REMEDIES

Scarletinal Antitoxin (Unconcentrated)—Mulford. A scarlet fever streptococcus antitoxin (Jour. A. M. A., May 2, 1925, p. 1338). It is prepared from the serum of horses treated with subcutaneous injections of toxic filtrate from cultures of scarlet fever streptococci and also with intravenous injections of the streptococci themselves. Each c.c. neutralizes at least 10,000 skin test doses of scarlet fever toxin. Marketed in packages of one syringe containing 10 c.c. (prophylactic dose) and in packages of one vial containing 40 c.c. (therapeutic dose). H. K. Mulford Company, Philadelphia.

Scarlet Fever Antitoxin—Lederle (Unconcentrated).—A scarlet fever streptococcus antitoxin (Jour. A. M. A., May 2, 1925, p. 1338). It is prepared by immunizing horses by the subcutaneous injection of the toxic filtrate obtained by growing the scarlet fever streptococcus in broth; also by injection of cultures of the scarlet fever streptococcus. Each c.c. neutralizes at least 10,000 skin test doses of scarlet fever toxin. Marketed in packages of one syringe containing 10 c.c. and in packages of one cylinder containing 50 c.c. with an intravenous injection outfit. Lederle Antitoxin Laboratories, New York.

Insulin—Stearns 80 Units, 5 c.c.—Each c.c. contains 80 units of insulin—Stearns (New and Non-official Remedies, 1925, p. 174). Frederick Stearns & Co., Detroit.

Insulin—Stearns 80 Units, 10 c.c.—Each c.c. contains 80 units of insulin—Stearns (New and Non-official Remedies, 1925, p. 174). Frederick Stearns & Co., Detroit.

Tuna Fish Protein Extract Diagnostic—P. D. & Co.—A protein extract diagnostic—P. D. & Co. (New and Non-official Remedies, 1925, p. 289). Parke, Davis & Co., Detroit. (Jour. A. M. A., July 4, 1925, p. 35).

Leoflund's Malt Extract.—A preparation essentially similar to extract of malt U. S. P. It is marketed as Loeflund's malt extract with calcium (containing calcium lactophosphate 0.5 per cent.) and Loeflund's malt extract with cod liver oil (Norwegian cod liver oil 33 per cent.), Britt, Loeffler & Weil, New York, distributor. (Jour. A. M. A., July 11, 1925, p. 115).

Neosalvarsan Dose XII.—Each tube contains neo-

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salvarsan (New and Non-official Remedies, 1925, p. 50), 1.8 Gm. H. A. Metz Laboratories, Inc., New York.

Schick Test—Lilly.—Diphtheria Immunity Test (Schick Test), (New and Non-official Remedies, 1925, p. 50), is also marketed in packages of two vials, one containing diphtheria toxin sufficient for fifty tests and the other vial containing the proper amount of diluent. Eli Lilly and Co., Indianapolis. (Jour. A. M. A., July 25, 1925, p. 269).

PROPAGANDA FOR REFORM.

Listerine.—So far as the composition is concerned, the use of Listerine as a simple mouth wash is unobjectionable. Unfortunately the manufacturers are not content to recommend and advise it exclusively for the field in which it has a place. Listerine is exploited with an air of conservatism, even a statement of composition is given—which, however, is essentially meaningless. While the claims as to antiseptic efficiency and the claim that it is a deodorant (it is not a deodorant, but merely covers one smell with another), may in general do little harm when Listerine is used as a "toilet preparation," the advertising that accompanies trade packages contains recommendations for its use in serious conditions, the self-treatment of which is a danger to the individual and inimical to the public health. The potency for harm that these recommendations have, is all the greater because the manufacturers affirm that they "do not advocate self-medication, even with Listerine." The trade package circular recommends the use of Listerine in "tonsillitis"; this may easily lead to its employment in undiagnosed cases of diphtheria, and dependence on it in such conditions may be the means of spreading this infective disease. The circular suggests its use in "bronchitis," which may be tuberculosis or pneumonia. It recommends its use in "leucorrhea," which may lead to the self-treatment of a serious infection. The self-treatment of any such conditions is fraught with danger to the individual and to the community (Jour. A. M. A., July 4, 1925, p. 55).

Treatment of Snake-Bite.—The indications for the treatment of snake-bite are the same as those for any other kind of poisoning: namely, first to remove the poison, secondly, to remove its effects. Immediate interruption of absorption should be attempted by application of a bandage for a period. Removal of the poison from the wound after having enlarged it, by sucking, by washing, or by destruction by red heat or a caustic is the next thing to attempt. The third, most important remedy, is the injection of antivenom serum, which must be specific for the particular venom involved. (Jour. A. M. A., July 4, 1925, p. 57).

The Parathyroid Hormone.—The significance of a hormone elaborated by the parathyroid structures for the metabolism of calcium, at least so far as the relation of the content of this element in the blood is concerned, seems to be well established. The promise of preparing an effective parathyroid product seems about to be fulfilled in various places. The publications of Hanson, in 1923, show that he was actively engaged in the extraction of an active product. Since then success had attended the investigation of Fisher and Larson and particularly those of Collip. Both Collip and Fisher and Hanson warn against the possible dangers of unwarranted therapy with potent preparation, for symptoms of atonia depression, diarrhoea and dyspnea are readily produced by large doses of a potent preparation. (Jour. A. M. A., July 11, 1925, p. 118).

The Quantitative Accuracy of Medical Tablets.—Attention has been called repeatedly to discrepancy between the actual composition and the claims made for various tablets and pills sold to the medical profession. Variations as high as 54 per cent above and 70 per cent below the label statement of composition have been found. Two associations of pharmaceutical manufacturers have appointed a joint committee which collaborates with the government authorities in an attempt to bring about improved conditions. During the past years, attention has been given by this group to the composition of hypodermic tablets. As a result of this study, plans for controlling the degree of accuracy of hypodermic tablets have been issued by the federal Bureau of Chemistry, in which is given a maximal permissible variation, ranging from 7.5 to 9 per cent. The fact that the pharmaceutical industry collaborates with the governmental authorities in the establishment of standards is encouraging. (Jour. A. M. A., July 11, 1925, p. 118).

Rheumeez Not Accepted for N. N. R.—The Council on Pharmacy and Chemistry reports that "Rheumeez" (Casco Laboratories, Elizabeth, N. J., is claimed to be magnesium cinchophen, the magnesium salt of 2-phenyl-quinolin-4-carboxylic acid. From the advertising issued for the product, one gets the impression that the production of the magnesium salt of cinchophen is a noteworthy achievement on the part of the Casco Laboratories and that the product is superior to cinchophen. However, this compound is the analogue of the well known cinchophen-sodium. When a solution of Rheumeez is treated with dilute hydrochloric acid, cinchophen is precipitated: therefore the compound will be decomposed in the gastric fluid of the stomach and its administration will be equivalent to the administration of cinchophen accompanied by an insignificant amount of magnesium. The Council found Rheumeez unacceptable because (1) it is an unessential modification of the established drug cinchophen; (2) it is marketed under a nondescriptive therapeutically suggestive name; and (3) it is advertised with unwarranted and misleading claims which will lead the public to attempt self-medication in conditions which require the diagnosis and supervision of physicians. (Jour. A. M. A., July 11, 1925, p. 132).

Prevention of Mosquito Bites.—Numerous preparations have been proposed to be applied to exposed parts of the body to prevent mosquitoes from biting. Among these are oil of pennyroyal, resorcin monoacetate euresol, various forms of petroleum, and powders and washes similar to the following: Oil of eucalyptus 25 c.c., talc 50 gm., starch 325 gm., oil of cinnamon 1 c.c., oil of patchouli 1 c.c., oil of santal 4 c.c., alcohol to make 400 c.c. (Jour. A. M. A., July 11, 1925, p. 134).

Lowering the Blood Pressure with Liver Extract.—The effect of liver extract administration on blood pressure was studied in thirty-three cases. In these cases hypertension had persisted for varying periods. Physiological sodium chloride solution of extract of the liver was injected intravenously. Twenty-five patients experienced no disagreeable symptoms, most of them reported apparent relief. In eight cases there were reactions of varying degree, some of which resembled protein shock. There was an average fall in the systolic pressure of 62 mm., and an average fall in diastolic pressure of 28 mm. Investigations are under way to determine the constituent or constituents of liver responsible for the effect on blood pressure. The clinical value of liver extracts will depend, not only on the development

of a stable and uniform extract, but also on the permanence of the fall in pressure and its relation to other pathologic changes existing in the body. (Jour. A. M. A., July 18, 1925, p. 194).

Mizar.—Mr. Sorokowski, formerly of Chicago and now apparently operating from a suburb, Oak Park, sells, "especially to the foreign element," a product that he calls "Mizar" as "the most effective remedy for rheumatism." Mizar comes in the form of an ointment. Two cases of dermatitis venenata from its use have been reported. The A. M. A. Chemical Laboratory examined Mizar and reports that the preparation may be considered essentially an ointment, the chief active ingredient of which is an extract of capsicum. Presumably a product of this sort appeals to those purchasers of "patent medicines" who feel that they are not getting their money's worth unless the preparation has an appalling smell or taste, or produces some physiologic reaction that will make them sit up and take notice. (Jour. A. M. A., July 18, 1925, p. 212).

Administration of Hexamethylenamin.—In a solution containing hexamethylenamin 3 gm., acid sodium phosphate 9 gm., and distilled water 120 c.c., a faint reaction for free formaldehyde is obtainable, though the reaction is much less intense than that obtained in a solution of the same amount of hexamethylenamin in 0.2 per cent hydrochloric acid. In the course of days when kept at ordinary room temperature and in diffused light the formaldehyde reaction in the solution increases. When recently prepared the acid sodium phosphate-hexamethylenamin mixture is not objectionable; however, in view of the comparative instability of the mixture it is advisable either, as Useful Drugs recommends, to administer acid sodium phosphate midway between the doses of hexamethylenamin or else to add hexamethylenamin to a solution of acid sodium phosphate just before administration. (Jour. A. M. A., July 18, 1925, p. 214).

Sodium Iodid in Asthma.—The use of iodids as adjuvants in the treatment of asthma seems to be of such general acceptance that recent medical literature reveals few special studies of its effects in this condition. The intravenous administration of sodium iodid in this condition has been reported. However, a report on the intravenous administration of sodium iodid in the Mayo Clinic states that there is no advantage in using sodium iodid intravenously, except in a few cases where massive doses might cause iodism. The Council on Pharmacy and Chemistry does not endorse the routine administration intravenously of sodium iodid. The Council holds that intravenous medication generally is not as safe as oral administration, and further, that there is little if any justification for the intravenous administration of such agents as sodium iodid, because their systemic effects are promptly obtained from oral administration. (Jour. A. M. A., July 25, 1925, p. 290).

Book Announcements

Symptoms of Visceral Disease. A Study of the Vegetative Nervous System in Its Relationship to Clinical Medicine. By FRANCIS MARION POTTENGER, M. D., LL. D., F. A. C. P., Medical Director, Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, Calif.; Author of "Clinical Tuberculosis," etc. Third edition. St. Louis. The C. V. Mosby Company. 1925. 394 pages with eighty-six text illustrations and ten color plates. 8vo. Cloth. Price, $6.50.

Personal and Community Health. By CLAIR ELSMERE TURNER, Associate Professor of Biology and Public Health, Massachusetts Institute of Technology; Associate Professor of Hygiene, Tufts College Medical and Dental Schools; Major, Sanitary Corps, U. S. A. (Reserve). St. Louis. The C. V. Mosby Company. 1925. 426 pages. Illustrated. 8vo. Cloth. Price, $2.50.

Some Fundamental Considerations in the Treatment of Empyema Thoracis. By EVARTS A. GRAHAM, M. D., Member of Empyema Commission, U. S. Army; Professor of Surgery, Washington University School of Medicine, St. Louis, etc. This essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery in 1920. St. Louis. The C. V. Mosby Company. 1925. 110 pages. Illustrated. 8vo. Cloth. Price, $2.50.

Methods in Surgery. Used in the Surgical Divisions of Barnes Hospital, St. Louis Children's Hospital, and Washington University Dispensary. Including Outlines for Case History-Taking, Preoperative and Postoperative Care of Patients, Routines, Diets, etc. By GLOVER H. COPHER, M. D., Instructor in Surgery, Washington University School of Medicine, etc. St. Louis. The C. V. Mosby Company. 1925. 232 pages. 8vo. Cloth. Price, $3.00.

Old and New Viewpoints in Psychology. By KNIGHT DUNLAP, Professor of Experimental Psychology in the Johns Hopkins University. St. Louis. The C. V. Mosby Company. 1925. 166 pages. 12mo. Cloth. Price, $1.50.

The Normal Diet. A Simple Statement of the Fundamental Principles of Diet for the Mutual Use of Physicians and Patients. By W. D. SANSUM, M. D., Director of the Potter Metabolic Clinic, Department of Metabolism, Santa Barbara Cottage Hospital, Santa Barbara, Calif. St. Louis. The C. V. Mosby Company. 1925. 72 pages. Illustrated. 12mo. Cloth. Price, $1.50.

Transactions of the College of Physicians of Philadelphia. Third Series. Volume the Forty-Sixth. Philadelphia. Printed for the College. 1924. 892 pages. 8vo. Cloth.

Smithsonian Institution, Bureau of American Ethnology, Bulletin 78. Handbook of the Indians of California. By A. L. KROEBER. Washington. Government Printing Office. 1925. 8vo. 995 pages and charts. Illustrated.

Thirty-Ninth Annual Report of the Bureau of American Ethnology. To the Secretary of the Smithsonian Institution. 1917-1918. Washington. Government Printing Office. 1925. Quarto. 636 pages. Illustrated.

Preventive Medicine. By MARK F. BOYD, M. D., C. P. H., Member of Regular Field Staff, International Health Board of the Rockefeller Foundation; formerly Professor of Bacteriology and Preventive Medicine in the Medical Department of the University of Texas. Second Edition, Revised. Philadelphia and London. W. B. Saunders Company. 1925. 8vo. of 429 pages with 135 illustrations. Cloth. Price, $4.00 net.

A Manual of Gynecology. By JOHN C. HIRST, M. D., F. A. C. S., Associate in Obstetrics, University of Pennsylvania, etc. Second Edition, Revised. Philadelphia and London. W. B. Saunders Company. 1925. 12mo. of 508 pages with 195 illustrations. Cloth. Price, $3.50 net.

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Physical Chemistry in Biology and Medicine. By J. F. McCLENDON, Ph. D., Professor of Physiologic Chemistry, University of Minnesota Medical School, and GRACE MEDES, Ph. D., Assistant Professor of Physiologic Chemistry, University of Minnesota Medical School. Philadelphia and London. W. B. Saunders Company. 1925. Octavo of 425 pages, illustrated. Cloth. Price, $4.50 net.

A Text-Book of General Bacteriology. By EDWIN O. JORDAN, Ph. D., Professor of Bacteriology in the University of Chicago and Rush Medical College. Eighth Edition, thoroughly revised. Philadelphia and London. W. B. Saunders Company. 1924. Octavo of 752 pages, fully illustrated. Cloth. Price, $5.00 net.

American Illustrated Medical Dictionary (Dorland). A New and Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, etc., with the Pronunciation, Derivation, and Definition. Thirteenth Edition, Revised and Enlarged. Edited by W. A. NEWMAN DORLAND, M. D., F. A. C. S. Philadelphia and London. W. B. Saunders Company. 1925. Large Octavo of 1344 pages with 338 illustrations, 141 in colors. Flexible binding $7.00 net; thumb index, $7.50 net.

To those familiar with Dorland's Medical Dictionary, the mere mention of the fact that a new edition has been issued is sufficient. This book is a recognized authority in the medical world and, perhaps, the most useful book any doctor could have in his library. This dictionary includes much collateral information of an encyclopedic character, together with new and elaborate tables on arteries, muscles, nerves, veins, etc.; of bacilli, bacteria, diplococci, micrococci, streptococci, weights and measures, posologic tables, eponymic tables of diseases, operations, signs and symptoms, stains, tests, methods of treatment, etc.

Since the appearance of the last edition, there has been no let up in the appearance of new terms in medical literature, and as a result, about 2,500 new words make their first appearance in this edition.

Doctors in this State will be especially interested to learn that Dr. E. C. L. Miller, of the faculty of the Medical College of Virginia, has been enegaged in the revision of this dictionary in the fields of bacteriology, immunology, public health, etc., as before. He has also made a painstaking revision of the terms in pharmacy and has added notably to the terminology of this department of the book.

We highly recommend this dictionary.

Tuberculosis in Greenland.

It is reported that tuberculosis is making serious ravages among the natives of Greenland, where the knowledge of the principles of hygiene is very primitive. A year ago a society for the relief of the children of Greenland was formed in Denmark (to which country Greenland belongs), which already has 5,000 members. With the aid of the Danish Ministry of the Interior and Health Service and the officials concerned with the government of the island measures have been adopted for the installation of a 20-bed hospital for tuberculous children. The society is also taking measures for the protection of orphans in Greenland and is endeavoring to find foster homes for them.

The American College of Radiology and Physiotherapy

Is to hold its annual meeting in Chicago, October 19-22, with headquarters at Hotel La Salle. Members of the Medical Society of Virginia are cordially invited to attend. Dr. Curran Pope, of Louisville, Ky., is president, and Dr. R. W. Fouts, of Omaha, Nebr., secretary.

Part-Time Schools, New York.

According to a recent report, ninety thousand boys and girls between fourteen and seventeen years of age are enrolled in part-time schools in New York State. Under the law, children between fourteen and eighteen not attending full-time day school must attend part-time schools where these schools are established. There are 655,000 boys and girls between these ages in the State and 282,000 are outside the full-time schools. The law with regard to part-time schools is working well, the director reports. It has served to keep many at full-time schools who might otherwise have gone to work, and has made for better enforcement of the compulsory school laws.

Health Exposition, Germany.

A national exposition on health, social welfare, and physical training is to take place in Dusseldorf in 1926 under the auspices of the National Government and with the co-operation of the State governments and various private organizations. The purpose of the exposition is to point out to the German people the importance of proper care of the health, to enable them to meet their obligations in Germany and outside of it. More than 1,000 specialists in various fields are engaged in arranging for the exposition.

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Editorial

Comments on Treatment of Bile Tract Disease.

As one reviews the literature on liver and bile, one is impressed with the volume of work done by various research workers within the last few years. Some of it seems reduplication of work on questions apparently settled, or, at least, apparently accepted as settled by physiologists and recorded in text-books used in medical schools. One is also impressed with the little advance made beyond what modern text-books of physiology give. Really, one may well wonder whether the workers attempting to do research have already familiarized themselves with what is considered to be known, as it is given to medical students in text-books on modern physiology. One may, therefore, well suggest to practicing physicians to read carefully the physiology of the liver and gall-bladder in modern text-books on the subject, if they are interested in this important field of study. By reading works on physiology one may see the important relationship between the misfunction and diseases of the liver and bile tract, with many problems of diagnosis necessarily coming up in the daily routine practice, where digestive disturbances and abdominal discomforts are found.

Having done this, one may naturally think of the symptomatology that may arise or eventuate as a result of the curtailment, abridgment, perversion and suppression of the physiologic action of the liver, and its secretory and excretory juice, the bile. One may easily conceive that the digestion of food results, not from the action of the secretions of the mouth, the stomach and the intestines, with accessory glands, when acting singly, but only when each organ acts in co-operation and sequence, with the others. When one organ of the alimentary tract fails in its function, compensatory strain is thrown upon the next organ involved in the process of food digestion. To repeat, when organs below the stomach, such as the liver and pancreas, or the ducts conveying digestive ferments therefrom, become so crippled as to fail to perform for a long time, essential parts of digestion, symptoms of disordered digestion necessarily result.

Liver and Bile

1. The liver plays its foremost part in body welfare in carbohydrate metabolism. The liver stores glycogen and maintains the level of blood sugar to meet requirements of body activity and heat; at the same time it excretes and secretes bile.

2. The liver function in protein metabolism is recognized and emphasized by physiologists. Its action on the amino-acids—both the new and rejected "building stones" of protein food and protein body—is essential to life.

3. The liver action on the fats is a physiologic one of no mean importance.

4. The bile function of the liver cells is another essential and most spectacular function of the liver. Pouring out from its cells 500 c.c. to 800 c.c. daily, bile is both an excretory fluid as well as a digestive one. It has been shown that bile flow is essential to the life of the body; this function of the liver cannot long be suppressed, without death following. It may be obstructed at its outlet without immediate death, but if suppressed at its source, life is terminated in time.

5. Bile, like urine, contains excretory ingredients; refuse matter; end products of metabolism. May it not contain important end products of blood cell, nervous tissue and fat tissue metabolism?

6. Bile, like pancreatic juice, contains important digestive properties in its action in the digestion of fats in the food; it also activates its companion-gland, the pancreas, to secrete pancreatic juice, and bile pigment and bile acids are reabsorbed from the intestinal fluids.

7. Bile is secreted continuously by the liver,

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but only small amounts enter the duodenum during fasting.

8. Bile is retained in the common duct by contraction of the sphincter of Oddi, during fasting.

9. Bile produces a pressure of 150 mm. of water at the sphincter of Oddi before escaping into the duodenum.

10. Bile, during fasting (between meals), after filling the common duct is diverted into cystic duct to the gall-bladder.

11. Bile is concentrated and stored in the gall-bladder during fasting.

12. Bile is discharged into the duodenum as the gastric evacuation of chyme occurs, after meals. This is brought about by the relaxation of the sphincter, as the acid chyme bathes the ampulla of Vater.

13. Bile from the gall-bladder, concentrated, then, through release of pressure at the outlet or by slight contraction, is expelled into the common duct and duodenum.

14. Bile in the duodenum activates pancreas, saponifies fats, and is reabsorbed by portal blood and returned to the liver for formation of new bile.

Symptoms of Disease of the Liver and Bile Tract

A. Without doubt the functions of the stomach, motor, sensory and secretory, are disordered when bile flow from the liver becomes impaired. This is a common association: gall tract disease and "dyspepsia."

B. In biliary disease, gastric symptoms like heartburn, sour stomach, eructation, heaviness and discomfort in the epigastrium after eating, are common.

C. Tenderness and pain on pressure are often found in biliary disease in the "gall-bladder region" and a boring pain under the right shoulder blade is a frequent occurrence.

D. The liver may be enlarged; the patient may be fat and may suffer from abdominal gas detention, constipation and piles.

E. The patient may have jaundice; the stool may be clay-colored.

F. Pain and biliary colic may occur.

G. In cirrhoses: ascites, hemorrhages, jaundice, spleen enlargement.

H. In infections: hectic fever, jaundice, enlargement.

I. In acute yellow atrophy, carcinoma, cystic disease, syphilis, splenomegalia, the symptoms vary with pathology.

Non-Surgical Treatment of Bile Tract Disease

In 1919, Lyon suggested a method of diagnosis and treatment of diseases of the gall-bladder and biliary disease by a non-surgical drainage with duodenal tube. He based his investigation upon a suggestion made by Meltzer (1917), *American Journal of Medical Sciences*, 153: 469, in which he says: "I make, therefore, the suggestion to test in jaundice and biliary colic the local application of a 25 per cent solution of magnesium sulphate by means of the duodenal tube. It may relax the sphincter of the common duct and permit the ejection of the bile, and, perhaps, even permit the removal of a calculus of moderate size wedged in the duct in front of the papilla of Vater."

In 1922, Lyon, having reported his satisfactory experience in the use of this method in a series of papers, in which he outlined his principles and results, answered certain criticisms of non-surgical drainage in the *New York Medical Journal*. In this paper he answered the criticisms of Einhorn, Cooke, Bassler, Lucket and Lutz. Since then the treatment has been questioned by surgeons as well. One may say that Lyon appears to take good care of his case in the argument. He has continued his use of this treatment and it has become quite widely used with success in cases of cholecystitis, with and without obstruction, and in diseases of the liver. In the November-December, 1924, *Therapeutic Gazette*, Lyon published a paper giving a summary of his opinion and experience of this treatment of biliary disease. Of 536 patients given this treatment by him in four years, 160 were referred for diagnosis only, and so his results are based upon 376 cases who were treated by "non-surgical drainage, combined autogenous vaccines, colonic irrigation, selective diet, and a minimal use of oral therapy."

Of the 376 patients treated, Lyon reports that 30 per cent were cured (symptom-free for from one to four years); 51.8 per cent were improved and "remain well for periods longer than one year;" 9 per cent were 50 per cent improved; all of these were "chronic;" 2 per cent were entirely unimproved; one patient died of heart failure during the course of

treatment; 7 per cent of the series could not be treated. Of the 536 cases ninety-six were operated upon, and of this ninety-six cases fifty-two had been previously operated upon, before being treated by Lyon. These were surgical failures. "The operations done in this series were as follows:

Cholecystectomies	16 cases
Cholecystotomies	24 cases
Appendectomies	37 cases
Gall-stones removed	17 cases
Adhesions released	17 cases
Gastro-enterostomies	7 cases
Other operations	15 cases
Multiple operations	20 cases
Multiple operations on gall tract	13 cases
Total number of operations on 52 cases	161 cases
Total number of abdominal operations on 52 cases	98 cases

"Of this series of fifty-two cases of previous surgical failures, twenty-seven were treated entirely by non-surgical procedures of various kinds (drainage, colonic irrigation, physical therapy, vaccines, diet and drugs) and the average total improvement secured was 83.6 per cent. Six cases could not be traced."

Lyon goes on to say: "It was necessary for me to send nineteen cases for further abdominal surgery, after a preliminary period of preparatory non-surgical drainage. Fourteen of the cases who were followed up by various forms of non-surgical management secured 90 per cent improvement over their previous disability. Two cases are too recent to tabulate; one could not be traced; and two cases died.

"Of the total ninety-six cases operated upon, this second analysis concerns fifty-eight cases personally studied pre-operatively, and then personally referred for surgery. The operations done on this series and the findings were as follows:

Cholecystectomies	33 cases
Cholecystotomies	6 cases
Cholecystoduodenostomies	2 cases
Choledochostomies	2 cases
Cholecystogastrostomy	1 case
Duodenduodenostomy	1 case
Appendectomies (incidental)	13 cases
Appendectomies alone	6 cases
Gall-stones removed	19 cases
Adhesions released	21 cases
Gastro-enterostomies	6 cases
Pyloroplasties	2 cases

"Of these fifty-eight cases, fifty were primarily gall-tract cases. Most of them represented late pathology, nineteen of which had had previous operations of the gall-tract. Many were distinctly 'bad risk' patients. Forty per cent were given a preliminary period of non-surgical drainage with sufficient improvement to later justify surgery, despite grave contraindications. The mortality was 10 per cent. Twenty-eight per cent required post-operative non-surgical drainage follow-up treatment to insure recovery from post-operative complications, chiefly due to residual duct catarrhs and infections not eradicated by surgery alone. No other method can so well prevent post-operative cholangitis and hepatitis."

At the close of his paper Lyon made the following general statement concerning treatment of gall-tract and liver diseases:

A. Dietetic measures are necessary to correct chemistry of liver.

B. Surgical corrections are necessary in established patholgy; non-surgical duodenal drainage before and after operation help patients to recovery.

C. Non-surgical drainage of the biliary system includes the pancreas as well.

D. Autogenous vaccines help convalescence.

E. Colonic irrigations assist in detoxicating patients.

F. Oral therapy assists in general daily regimen.

The New Pharmacopeia.

The tenth revision of the U. S. Pharmacopeia was placed on sale August 15th last. The new drug standards for this country will go into effect January 1, 1926. The association of a committee of twenty-one medical men was important in shaping the revision in the interest of the work of the medical profession. Consequently, says *The Journal of the American Medical Association*, the new book should more nearly represent rational medicine than some of the preceding revisions in which pharmacists and pharmaceutic manufacturers largely controlled the situation. An announcement in *The Journal*, for August 29th, may be read with interest:

"The United States Pharmacopeial Convention met in Washington in May, 1920, and appointed a committee to revise the Pharma-

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copeia of the United States. The new Pharmacopeia was placed on sale August 15th; it becomes official January 1, 1926. The responsibility for the scope of the new Pharmacopeia was placed on the twenty-one members who held the degree of Doctor of Medicine. Consequently, the new book should more nearly represent rational medicine than some of the preceding revisions in which pharmacists and pharmaceutic manufacturers largely controlled the situation. From the standpoint of the physician, the most noteworthy feature of this revision is the fact that but forty new drugs and preparations were added, while 192 have been deleted. The additions are drugs which give promise of therapeutic worth: thirty-one of them already described in New and Nonofficial Remedies. The omission of such substances as arnica, calcium hypophosphite, cerium oxalate, coriander, grindelia, hops, lactucarium, three lithium salts, matricaria, prickly ash, musk, parsley, pepper, saw palmetto, stillingia, sumbul and taraxicum is a distinct aid to scientific medicine. The retention of sarsaparilla is to be regretted. An effort has been made to simplify the Latin titles: Examples are: The substitution of Cinchophenum for Acidum Phenylcinchoninicum; Methenamina for Hexamethylenamina; Liquor Pituitarrii for Liquor Hypophysis. Whereas the present Pharmacopeia requires that two drugs and their preparations be standardized biologically, the new book requires that eight must be so standardized. The unit of measurement, the milliliter (abbreviation 'Mil'), which is used in the present Pharmacopeia has happily been abandoned again and the familiar cubic centimeter (abbreviated 'cc.') restored."

SOME WAYS TO KILL A MEDICAL SOCIETY.

1. Don't go to the meetings.
2. If you do attend a meeting, find fault with the work of the officers and members.
3. Never accept office, as it is easier to criticize than do things.
4. Get sore if you are not appointed on a committee, but if you are, do not attend committee meetings.
5. If asked by the chairman to give your opinion on some matter, tell him you have nothing to say. After the meeting, tell everyone how things should be done.
6. Hold back your dues, or don't pay at all.
7. Don't bother about getting new members. "Let George do it."—(Selected.)

News Notes

TO THE MEMBERS OF THE MEDICAL SOCIETY OF VIRGINIA

The Richmond Academy of Medicine extends a cordial invitation to all of the members of the State Society to be present at the 56th annual meeting to be held in Richmond, October 13 to 16, inclusive. The Committee hopes to make this one of the most enjoyable occasions in the history of the Society and every effort is being made to provide entertainment not only for the members themselves but for those of their families who may attend.

We have been assured that a carefully selected scientific program is being arranged and the names of distinguished guests from a distance will also appear on the program. The social entertainment necessary to supplement the main activities of the meeting will be provided by a number of committees, the members of which will cheerfully co-operate in making the entire meeting a success.

Let each member of the Society make his plans to be our guest at this time. We want a record-breaking attendance.

T. D. JONES, Chairman,
Committee on Arrangements.

On To Richmond!

Next month is the time. Dates for the annual meeting of the Medical Society of Virginia are October 13, 14, 15 and 16, and all members of the Society should try to attend this meeting, for coming to Richmond, is like "coming back home" for many of the doctors in the State. All members of the Society are urged to attend this meeting and bring their wives and daughters. See that your Society has its quota of delegates.

Dr. Thomas D. Jones, Medical Arts Building, Richmond, is general chairman in charge of the Richmond meeting. All meetings will be held in the Jeffeerson Hotel, headquarters for the convention. Attractive entertainment is being arranged for the ladies and it is expected that the scientific and social features will be sufficient to interest the men.

The usual golf tournament is to be held on Tuesday, the 13th, opening day of the meeting—the first session being that evening. Those who wish to take part in this tournament should write at once to Dr. E. H. Terrell, Medical Arts Building, this city.

Virginia now boasts a number of women doctors in its membership and special invitation is extended them to attend this meeting. Dr. Mary Baughman has been appointed a mem-

ber of the entertainment committee that she may especially look out for the women doctors in attendance at this meeting and she would be pleased to get in touch with each woman doctor in the Society.

The Scientific Exhibit is expected to be very interesting. Already several individuals have signified their attention of having exhibits. Among others there will be X-ray lantern slides of varying conditions, drawings and specimens of unusual and intereesting tumors, and drawings and photomicrographs of experimental work. Dr. J. Shelton Horsley, chairman of this committee, urges all who care to have an exhibit to send their applications to him as soon as possible.

Scientific exhibits, as usual, will be attractive and the exhibitors who have taken space will be interested in showing their products to the members of the Society and their friends.

The symposium on "Puerperal Infection" should be a good one, and the guests invited by our president, Dr. Hunter McGuire, of Winchester, will add greatly to the interest of the meeting. They are Drs. George E. de. Schweinitz and Alfred Stengel, of Philadelphia, and Dr. David S. Hillis, of Chicago.

We are getting out of the beaten tracks this time and are planning to have motion pictures, one evening. These will be on two good professional subjects and should prove a pleasant innovation at the meeting.

You cannot afford to miss this meeting. Come early and stay late!

Notice.

During the 1919 session of the Medical Society of Virginia, a Virginia Railway Surgeons' Association was organized. Since that time this Association has been inactive. Upon the request of a large number of Railway Surgeons of this State, the President of this Association has called a meeting of the Railway Surgeons of the State for the purpose of reorganization.

This meeting is called during the coming session of the Medical Society of Virginia in Richmond. The meeting will be held in the room provided for the House of Delegates at 2:30 P. M. Thursday, Oct. 15, 1925.

All railway surgeons of the State are urged to attend. By order of the President.

E. L. Kendig, *Secretary.*

Late Vacationists.

Dr. J. A. Rucker and family, of Bedford, are home again after a motor trip through the mountains of North Carolina.

Dr. and Mrs. Karl Blackwell and children, of Richmond, recently visited relatives near Warrenton, Va.

Dr. and Mrs. William Meyer have returned to their home at Herndon, after a visit to Richmond, Ocean View and Enfield, N. C.

Dr. Greer Baughman and daughter, of Richmond, are home again after a water trip to Boston, Mass.

Dr. and Mrs. H. E. Whaley, Victoria, were recent visitors in Saunton, Va., having gone there to attend the Whaley-Thomas wedding.

Dr. H. S. Belt, South Boston, recently visited a brother in New York City.

Dr. and Mrs. E. G. Hill, Richmond, left the latter part of August for a motor trip through the Valley of Virginia.

Dr. H. P. Gibson, Leesburg, spent his vacation recently at Ocean City, Md., where his wife had been for some time.

Dr. and Mrs. E. H. Terrell and daughters returned to their home in Richmond the latter part of August, after a motor trip through the New England States and Canada.

Dr. P. G. Hamlin, a member of the staff of the Epileptic Colony, was a recent visitor at Eastern State Hospital, Williamsburg, Va.

Dr. Maurice M. Lynch, Jr., one of the interns at Memorial Hospital, Richmond, recently visited his parents at their home in Winchester, Va. He had as his guest Dr. John Hillsman, of Richmond. Both are of the '25 class, Medical College of Virginia.

Dr. C. E. Dyer, of Jewell Ridge, spent several days with relatives in Pulaski, the latter part of August, when returning from a vacation spent in Washington, Baltimore, New York, and in attending the American Legion convention at Staunton.

Dr. Robert C. Bryan has returned to Richmond, after spending his vacation with his family at Biddeford Pool, Maine.

Dr. N. G. Wilson and children, of Norfolk, were among the late summer visitiors at Maple Shade Inn, Pulaski, Va.

Drs. C. M. Caravati and L. O Snead, of Richmond, recently visited Dr. and Mrs. R. F. Cline, at Winchester, Va.

Dr. and Mrs. L. H. Apperson, of Petersburg,

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spent the month of August with relatives at Tunstall, Va.

Dr. and Mrs. T. H. Massey, Smithfield, left the end of August for a motor trip to Washington, Niagara Falls, and other northern points.

Dr. and Mrs. E. T. Gatewood and children have returned to Richmond, after spending some time at Buena Vista Springs, Pa.

Dr. and Mrs. M. H. Tredway, Emporia, spent their vacation visiting relatives and friends at South Hill and Chatham, Va.

Dr. and Mrs. Stuart McGuire have returned to Richmond, after a vacation spent at Fisher's Island and in New York City.

Dr. and Mrs. H. M. Snead, of South Hill, have been spending some time at Fork Union, Va.

Dr. and Mrs. Warren Vaughan and family of Richmond, returned home early in August, after a visit with relatives in Michigan.

Dr. and Mrs. Roshier W. Miller and son, Richmond, have been tenting with friends on their lots at Rappahannock Banks, Va., while their cottages are being built.

Dr. Meade S. Brent, Petersburg, visited his former near Heathsville, Va., in August.

Dr. J. B. Dalton and family, Richmond, visited friends in Emporia during August.

Dr. R. H. Woolling, Pulaski, spent some time in August in Richmond, Va.

Dr. W. C. Ford, Woodstock, visited friends in Chicago, Ill., during August.

Dr. and Mrs. T. Latane Driscoll, Richmond, visited Mrs. Driscoll's parents at Scottsville, Va., in August.

Dr. and Mrs. A. C. Swimley, of Winchester, with a party of friends, took a motor trip to Fairport, N. Y., in August.

Dr. A. S. Lilly and family, Richmond, after returning from a motor trip to West Virginia, spent some time at their summer home on the Rappahannock.

Dr. E. R. Miller, Harrisonburg, spent the month of August in Richmond, Va., and Tampa, Fla.

Dr. and Mrs. Clifton Miller, Richmond, returned home late in August after a visit to Woodberry Forest, Va., and to Old Sweet Springs.

Dr. P. W. Boyd and daughters, returned to their home at Winchester, about the middle of August, after a visit to Dr. Hugh MacLean, at Regina, Canada.

Dr. and Mrs. St. George T. Grinnan, Richmond, returned home the middle of August, after a stay at Mountain Lake, Va.

Dr. David B. Lepper, Smithfield, of the State Health Department, visited Waverly, Va., in August.

Dr. and Mrs. Stuart Michaux returned to Richmond, the latter part of August, after a visit to Hot Springs, Va.

Dr. Samuel Maphis, Warrenton, recently visited his sister at Edinburg, Va.

Dr. and Mrs. Lawrence T. Price returned to Richmond late in August, after a visit to Dr. Price's former home in Botetourt County, Va.

Dr. and Mrs. W. S. Ferguson, Lynchburg, in August went on an automobile trip which took them through the White Mountains and into Canada.

Dr. William Patterson returned to Richmond in August after a visit to his farm at Grottoes, Va., and with friends in Waynesboro, Va.

Dr. and Mrs. W. O. Bailey and children, Leesburg, spent part of August at Ocean City, Md.

Dr. and Mrs. Frank K. Lord, Richmond, took a motor trip last month through the Valley of Virginia.

Dr. and Mrs. Charles C. Page returned to their home at Orange, the middle of August, after a visit to Asbury Park, N. J.

Dr. I. C. Harrison returned to Danville the middle of August after a visit to Richmond and New York.

Dr. and Mrs. D. D. Talley, Jr., and Dr. and Mrs. Robert S. Preston, Richmond, after a visit at Fisher's Island, left New York City, the first of September, for a two weeks' motor trip through the Northern States and Canada.

Dr. and Mrs. J. R. Gorman, Lynchburg, have been visiting Mrs. Gorman's parents, Dr. and Mrs. J. H Ferguson, at Clifton Station, Va.

Dr. and Mrs. Charles V. Carrington, Richmond, spent some time in August, cruising with friends off the Maine coast.

Dr. G. W. Brown and daughter, of Williamsburg, spent the latter part of August in Asheville, N. C.

Dr. and Mrs. George B. Fadeley, of East

Falls Church, recently visited relatives at Edinburg, Va.

Dr. and Mrs. Emory Hill and Dr. J. A. White, who spent the summer abroad, have returned to their homes in Richmond.

Dr. P. A. Irving, Farmville, recently attended the Bible lessons meeting at Massanetta Spring, Va.

Dr. and Mrs. A. C. Monroe and daughters, Richmond, spent the first part of August at Ocean View and Virginia Beach.

Dr. W. W. Seward, Surry, visited Buffalo Lithia Springs, Va., in August.

Dr. T. E. Hughes, Richmond, spent his vacation at White Sulphur Spring, W. Va.

Dr. J. W. Walters, Lynchburg, recently visited relatives at Luray, Va.

Dr. and Mrs. Henry A. Bullock and children, Richmond, returned home in August, after a motor trip to North Carolina.

Dr. and Mrs. L. O. Vaughan, Waverly, went by motor, in August, for a visit in Delaware.

Dr. George Tully Vaughan, Washington, D. C., visited friends at Amherst, Va., last month.

Dr. and Mrs. John D. Foltz, Richmond, are home again after a visit to friends in Harrisonburg, Va.

Dr. Louis S. Greene and Dr. John W. Burke, of Washington, D. C., after returning from a trip abroad, spent some time with their families at Woodberry Forest, Va.

Dr. Lucy Hill, of the class of '24, Medical College of Virginia, after a year's internship at St. Elizabeth's Hospital, Washington, D. C., is spending some time with her parents, Dr. and Mrs. H. H. Hill, of Locust Dale, Va.

Dr. and Mrs. Emmanuel Wallerstein, Richmond, are home again after a stay at Blowing Rock, N. C.

Dr. and Mrs. A. J. Hurt and daughter, of Chester, spent the month of August on a motor trip visiting a number of places in Florida.

Dr. A. I. Dodson, Richmond, is home again after attending encampment with the National Guard at Old Point, Va.

Dr. Joseph E. Burns,

Goldston, N. C., of the class of '23, Medical College of Virginia, is now a house surgeon with the Willard Parker Hospital, New York, after completing a service at City Hospital, New York.

The Clinical Congress of the American College of Surgeons

Will hold its fifteenth annual session at the Bellevue-Stratford Hotel, Philadelphia, Pa., October 26-30, inclusive. Dr. Franklin H. Martin, Chicago, is director-general, and Dr. Rudolph Matas, New Orleans, La., president.

Married.

Dr. Jury B. Loving, New Goshen, Ind., and Miss Anne Elizabeth Harris, Prospect, Va., September 5. Dr. Loving is a native of Culpeper County, Va., and a member of the class of '22, Medical College of Virginia.

New Medical Officer in Charge at Oteen.

Dr. Edward P. Odend'hal, who formerly practiced in Virginia, has been appointed medical officer in charge of the U. S. Veterans' Bureau Hospital, at Oteen, N. C. He succeeds Dr. Herbert E. Whitledge, who will have an indefinite leave.

The American Dietetic Association

Will hold its annual convention at Edgewater Beach Hotel, Chicago, Ill., October 12-15, inclusive. The program has been arranged to include the various branches of the food problem.

Dr. Henry A. Hornthal,

Of the class of '24, Medical College of Virginia, upon completion of his year as house surgeon at St. Luke's Hospital, Richmond, has taken over the office and practice of the late Dr. Robert J. Yates, at Potomac, just out from Alexandria, Va.

The American Public Health Association

Will hold its fifty-fourth annual meeting in St. Louis, Mo., October 19-22, with Hotel Statler as headquarters. For detailed information, address the secretary, 370 Seventh Avenue, New York City.

Dr. George C. Tyler,

Who located at Chester, Va., shortly after receiving his diploma in medicine from the University of Tennesseee, last year, has moved to Heathsville, Va., where he will continue the practice of medicine.

Dr. Harry H. Ware, Jr.,

Who graduated at the Medical College of Virginia, last year and later served an internship at Stuart Circle Hospital, Richmond, is now house doctor at the Neponsit Beach Hospital for Children, at Rockaway Beach, N. Y.

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Announcement of New Report.

The Children's Bureau of the United States Department of Labor has just issued a report on "Laws Relating to Sex Offenses Against Children." This publication (Number 145) includes abstracts and texts of State age-of-consent laws and of laws relating to abduction, seduction, prostitution, and to other sex offenses, so far as they concern minors. The abstract of the laws was made by Reuben Oppenheimer, and their compilation was the work of Lulu L. Eckman. The text of Federal laws which have some bearing upon the subject, such as laws relating to the white-slave traffic, or to the transportation of aliens for immoral purposes, is also included. Single copies of this report will be issued free upon request.

Dr. H. O. Bell,

Formerly medical inspector with Richmond Bureau of Health, has completed a post-graduate course at New York Nursery and Child's Hospital, and is now spending some time at his former home, Wilmington, Virginia.

"The Navy's Human Problem"

Is one of a series of papers by Dr. W. Armistead Gills, Richmond, U. S. Navy (retired), which appeared in a recent issue of *McNaught's Monthly*. Other articles in this series are "Navy Doctors and Sick Sailors" and "The Woes of Sick Bluejackets." These articles tell graphically of experiences witnessed by Dr. Gills during his service and are interesting reading.

Elizabeth Buxton Hospital,

Newport News, Va., has issued its annual report for 1924. The report shows a variety of work done on 1,650 patients. The total number of operations on these patients, major and minor, was 1,131. The mortality rate was low.

Dr. Fravel Resumes Work.

After an illness of several months, Dr. R. C. Fravel has returned to Richmond and has opened offices at 1103 West Franklin Street, the home of the late Dr. J. N. Upshur, which Dr. Fravel purchased this summer.

For the past sixteen years, Dr. Fravel has been associated with Dr. Stuart McGuire at St. Luke's Hospital. He will continue to limit his work to general surgery.

Randolph L. Wood,

Son of Dr. A. F. Wood, of Parksley, Va., with a party of friends, narrowly escaped serious accident, this summer, when his car skidded in deep sand and ran into a telegraph pole, cutting it off twelve inches from the ground. No one was hurt.

Randolph entered the University of Richmond, this Fall, to take the pre-medical course, leading to the study of medicine, which he will take up at Medical College of Virginia.

American Board of Otolaryngology.

The next examination given by the American Board of Otolaryngology will be held at the Cook County Hospital, Chicago, on October 19, 1925. Application should be made to the Secretary, Dr. H. W. Loeb, 1402 South Grand Bouleveard, St. Louis, Missouri.

Dr. J. B. DeShazo

Has returned to his home at Ridgeway, Va., after taking a post-graduate course in dermatology, in New York.

Dr. A. T. Sheffield,

Recently of Holland, Va., has moved to Suffolk, Va., and has offices in the American Bank and Trust Building, of that place.

Dr. J. S. Horsley, Jr.,

Richmond, recently underwent a third operation upon his leg for an old football injury.

The Southern Medical Association Meeting.

The various committees appointed in connection with the meeting of the Southern Medical Association in Dallas, November 9, 1925, report very satisfactory progress.

It is especially gratifying to know that the hotel committee has already succeeded in having reserved for guests more than 1,600 rooms in the leading and best hotels of Dallas. This insures comfortable and suitable hotel accommodation, no matter how great the attendance.

For the first time in its history, the Association will have all its activities housed in one building. The new educational building of the First Baptist Church on the corner of St. Paul and San Jacinto Streets will be completed long before November and will have a sufficient number of assembly halls for the various section meetings. The large auditorium with its splendid acoustics gives ample room for all general sessions and the basement floor, easily accessible, will give more than enough room for all exhibits, commercial and scientific.

Clinics in all branches will be conducted in all Dallas' splendid hospitals, which contribute

largely to its rank as a medical center of the Southwest. The bed capacity in the larger hospitals alone is in excess of 1,200. Over $8,000,000.00 has been invested in the hospital facilities. Below is given some data on the different institutions located in the city.

BAYLOR HOSPITAL AND MEDICAL SCHOOL

The Baptist Memorial Sanitarium was opened in 1909, being enlarged in 1922 and the name changed to Baylor Hospital. It is the largest sanitarium in the city, having a capacity of 432 beds. One hundred graduate nurses and one hundred and sixty-five training nurses are employed.

The capital invested is in excess of $3,000,000, the hospital being operated by the Baptist denomination of Texas.

While the main plant of the Baylor University is located at Waco the schools of Dentistry, Nursing, Medicine and Pharmacy are in Dallas. The enrollment is in the neighborhood of 1,000. The Medical Department will be in session during the S. M. A. meeting, and all its clinics open to visiting physicians.

ST. PAUL'S SANITARIUM

This hospital was established in 1896. The original capacity was 210 beds, but an addition built in 1916 increased the capacity to 300 beds. Two hundred and fifty nurses are employed in the sanitarium. A nurses' training school is operated by the Daughters of Charity of St. Vincent de Paul who are also in charge of the management of the main sanitarium. Investments in buildings and grounds are placed at $1,750,000.00

DALLAS SANITARIUM

The first bed unit of this hospital is now under construction and will cost $500,000. When completed the hospital will contain 500 beds and represent an investment of more than $1,250,000. It was established and will be operated by the North Texas Methodist Conference.

PARKLAND HOSPITAL

This 250 bed hospital is operated by the City-County Board. It was established in 1896. Ten graduate nurses and seventy-two nurses in training are employed. It is estimated that the capital invested is in the neighborhood of $1,000,000. Dr. Lane V. Cooke is the superintendent. A nurses' training school is operated in conjunction with the hospital. At the present time plans are being made to enlarge the school to take care of one hundred students.

FREEMAN MEMORIAL CLINIC

This free clinic was first established in the basement of the First Presbyterian Church, in 1921. In 1924 the clinic was endowed by T. R. Freeman and a beautiful building was erected as a memorial to his wife and son. The clinic is absolutely free and handles an ever growing number of patients. The building, together with the equipment, is valued at $100,000.

HELLA TEMPLE CHILDENS' HOSPITAL

Established in 1923 by Hella Temple for the treatment of crippled children. It contains fifty beds and employs five registered nurses, fourteen attendant nurses and twelve other employees. It is supported jointly by Hella Temple and the Scottish Rite bodies.

The Timberlawn Sanitarium is a forty bed hospital employing eighteen nurses and treating nervous and mental diseases. It is located on the Orphan's Home Road and represents an investment of $75,000.

MEDICAL ARTS BUILDING

The story of Dallas as a medical center would not be complete without some mention of this nineteen story skyscraper, completed in 1924 at a cost of $1,500,000. It was designed for and is occupied by the medical and dental professions. It is of Gothic Cross design, assuring both light and ventilation to every office. At the time the building was erected it was the tallest monolithic concrete building in the world. About 60,000 patients visit this building every month.

The Medical Profession of Dallas and of Texas warmly invites the Southern Doctor and his wife to visit Dallas on November 9, 1925.

CURTICE ROSSER, M. D.,
For the Publicity Committee.

Dr. Rachel F. Weems,

Medical College of Virginia, '24, spent the summer at her home in Ashland, Va., after completing a year's internship at the Memorial Hospital, Worcester, Mass. She is now located at State Teachers' College, Harrisonburg, Va., as resident physician and professor of health education.

Dr. Rolston's Barn Struck by Lightring.

Dr. C. H. Rolston, Mt. Clinton, Va., had the misfortune to lose a big barn, the first of this month, when it was struck by lightning. In

addition to the building and grain, several fine horses and hogs were destroyed in this fire.

Dr. Q. H. Barney,

Formerly of Wardensville, W. Va., has located at Mt. Sidney, Va. Dr. Barney graduated from Medical College of Virginia in 1916.

Dr. E. D. Rollins,

Formerly of Gate City, Va., is located at 511 Shelby Street, Bristol, Tennessee.

The Treatment of Syphilis.

A working monograph on the treatment of syphilis has been prepared for the medical profession by the Dermatological Research Laboratories which will be sent with the compliments of the publishers to any physician requesting a copy. This booklet discusses, in separate chapters:

Introduction, Syphilis today; Arsphenamine vs. Neorarsphenamine; Sulpharsphenamine; Bismuth in Syphilis; Mixed Treatment; Methods of Treatment in the various stages of the disease; Intraspinal Injections; Technic of Preparing Arsphenamine, Neoarsphenamine, Sulpharsphenamine, and Bismuth; Possible Reactions, etc.

Requests for this monograph should be addressed either to The Abbott Laboratories, Chicago, or the Dermatological Research Laboratories, Philadelphia.

Dr. R. A. Rosser,

Formerly of Portsmouth, Va., is now located in Lynchburg, Va., with offices at 813 Church Street.

The American Roentgen Ray Society

Will hold its annual meeting at the Mayflower Hotel, Washington, D. C., September 22-25. Dr. Charles L. Martin, of Dallas, Texas, is secretary of the Society.

Two of Virginia's Public Health Men Move to Florida.

Dr. E. C. Levy, one of the acknowledged authorities on preventive medicine in the United States, and for a number of years director of public welfare of Richmond, Va., has accepted the position as head of the Health Department of Tampa, Florida, and will leave this month to enter upon his new duties.

Dr. A. D. Knott, county health officer of Accomac County, Va., has also resigned his work in this State to accept a similar position at West Palm Beach, Fla. Dr. Knott's work has been of a high standard, as demonstrated by results obtained.

We Are Getting Older.

According to the New York State Department of Health, the population of the State of New York is getting older. The estimated average age of the people of that State is now thirty years and three months, whereas in 1850 it was twenty-four years and seven months. In only twenty years, the expectation of life at birth, in New York State, has increased for males by seven years and three months, and for females by six years and five months, so that the expected age of males at birth is now fifty-two years and ten months, and of females fifty-five years and eight months.

What is true of the average age of the people and the expectation of life in New York is also true of our and other states, advances in preventive and curative medicine having been the principal contributory causes in bringing about these results.

The Medical Association of the Valley of Virginia

Will hold its semi-annual meeting in Winchester, September 24, Dr. D. M. Kipps, of Front Royal, presiding. Dr. Alex. F. Robertson, Jr., Staunton, is secretary.

Dr. I. C. Harrison,

Danville, Va., has tendered his resignation as a member of the city school board of that place, his reason being that the duties of the board trespassed too much upon his professional work.

Dr. P. E. Schools,

Physician in attendance at Pine Camp, Richmond's municipal tuberculosis hospital, has been appointed head of the institution and will enter upon his duties October 1.

The National Recreation Congress

Will hold its twelfth annual meeting in Asheville, N. C., October 5-10, under the auspices of the Playground and Recreation Association of America. This will be the first time the Congress has met in the South since the meeting in Richmond, Va., in 1912, and great strides have been made in the work since that time. Further information may be obtained from Playground and Recreation Association of America, 315 Foourth Aenue, New York City.

Dr. Kendig to be Senator.

Dr. E. L. Kendig, of Victoria, Va., has been

declared Senate nominee and will represent the Ninth District in the State Senate for the next two years.

Dr. W. C. Harman,

Dolphin, Va., was elected a member of the executive committee of the Brunswick Post, No. 40, American Legion, at its annual meeting in Lawrenceville, in August.

Doctors on Committees of Chamber of Commerce.

The president of the Staunton and Augusta County Chamber of Commerce has appointed the following doctors of Staunton to serve on various committees for the ensuing year: Drs. Alex. F. Robertson, Jr., M. J. Payne, Richard P. Bell, Kenneth Bradford, and J. Fairfax Fulton.

Dr. F. V. Fowlkes,

Well known as the representative in this section of Mead Johnson Company, has moved his home from Burkeville, Va., to 2510 Stuart Avenue, Richmond.

The Interstate Post-Graduate Assembly of America

Will be held at St. Paul, Minn., October 12-16, inclusive, with general headquarters for all scientific sessions and exhibits at the St. Paul Auditorium. Hotel headquarters will be the St. Paul Hotel. Many distinguished speakers are on the program.

Dr. Mary Baughman,

Richmond, Va., announces removal of her offices to 611 Medical Arts Building, this city.

The U. S. Civil Service Commission,

Washington, D. C., announces open competitive examinations for chief social worker (psychiatric), receipt of applications to close September 29; and for junior medical officer, assistant medical officer, associate medical officer, medical officer, and senior medical officer, applications to be rated as received until December 30, 1925, and for trained nurse (psychiatric), receipt of applications to close October 10. Information in regard to the above may be obtained from the above named Commission.

Physiotherapeutic Convention.

Physicians are invited to attend the fourth annual Physiotherapeutic Convention to be held at the Drake Hotel, Chicago, October 12 to 16, 1925. Papers will be read and discussed by leading physicians of National and International reputation in this field. For particulars see page program in advertising section in this issue. Demonstrations and exhibits of the latest apparatus and methods employed in physiotherapy will be given.

Physicians who are in good standing with their State Medical Associations and can give evidence of that fact are invited. Reservations may be made and programs obtained by addressing the Educational Department of H. G. Fischer & Company, 2335 Wabansia Ave., Chicago, Illinois.

Physicians Wanted for Institutional Work in Maryland.

There are three vacancies for assistant physicians in the Maryland State service, with accommodations for single men. Applicants interested may apply to the State Employment Commission, 22 Light Street, Baltimore, Maryland.

For Sale.

Medical library, office and hospital equipment of the late Dr. W. W. Chaffin. The equipment includes: Allison table; Bausch and Lomb microscope; E. S. I. cautery transformer; electro-diagnostic outfit; portable operating table; specialist cabinet; instrument cabinets; Kny-Scheerer chair; Max Woches & Son air compressor; high tension intermediate X-ray unit, which has not been uncrated; basins; tables; splints; instruments, etc.; also Crown Victor vibrator, and Powers and Anderson instrument sterilizer. Write Mrs. W. W. Chaffin, Pulaski, Va. (Adv.)

For Sale.

Have recently closed small private hospital fully equipped with best material available. Sterilizing outfit, adjustable bedside tables, metal back rests, fracture cradles (for bed clothing) and other hospital and operating room equipment to be disposed of at greatly reduced prices. Address Box 34, Lynchburg, Va. (Adv.)

Sanitarium Building for Rent or Sale.

Within sight of the State Tuberculosis Sanitarium, near Charlottesville, Va., on a concrete road, on a grove crowned eminence, is a large brick residence which is now for rent or sale. This adjacent State Sanitarium has usually a waiting list of several months, and consequently discharges all patients at the first moment possible; hence a good private tuberculosis plant here would offer a a prompt and convenient initial aid, and a longer continuation of atten-

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tion, that is often needed. This residence has some twenty-five rooms, hot water heat, etc., and could easily give dining service for a hundred, or more, patients, with a fine grove and wide terraces for tents and shacks.

For details, write P. O. Box 416, Charlottesville, Va.

Obituary

Dr. Robert Jackson Yates,

Of Potomac, Arlington County, Va., died at his home at that place, July 8, at the age of sixty-one years. Death was due to Bright's disease. Dr. Yates was a native of Culpeper County, Virginia. After graduating at William and Mary College, he entered George Washington University Medical School, Washington, D. C., and received his degree in medicine from that school in 1907. Dr. Yates was a member of the Medical Society of Virginia, a Mason, and mayor of the town of Potomac. He was also anesthetist to the Alexandria Hospital. He is survived by his wife, one daughter and three sons.

Dr. Linwood D. Batkins,

Of Richmond, Va., died at a local hospital, August 24, after a brief illness. His health had not been good for sometime but his condition was not regarded as serious until recently. Dr. Batkins was born in Richmond fifty-two years ago and graduated from the Medical College of Virginia in 1894. He had served as one of the city's physicians to the poor for twenty-eight years, and had many friends among those whom he had served. He was a Mason and a member of his local and State medical societies. His wife and two sons survive him.

Dr. George Thomas Divers,

Of Stuart, Va., died from apoplexy, in his hospital at Stuart, on the morning of August 29. Dr. Divers was forty-four years of age and studied medicine at the Universiay College of Medicine, Richmond, from which he graduated in 1909. He was prominent in the business and profesional life of Stuart and was physician in charge of St. Martin's Hospital at that place. At the time of his death, Dr. Divers was president of the Patrick-Henry Medical Society. He was also a member of the Medical Society of Virginia. His wife survives him.

Dr. Bernard W. Switzer,

Lexington, Va., died in his home at that place September 3, as a result of heart disease. He was born at Mt. Crawford, Va., fifty-six years ago and, upon completion of his academic education, studied medicine at the College of Physicians and Surgeons, Baltimore, from which he graduated in 1893. He was a Mason, a member and secretary of the Rockbridge County Medical Society at the time of his death, and had been a member of the Medical Society of Virginia since 1896. Dr. Switzer specialized in diseases of the eye, ear, nose and throat. He is survived by his wife and two brothers.

Dr. Patton Kimbrough Pierce,

Eutaw, Ala., died in the hospital at Harrisonburg, Va., August 18, as the result of a broken neck suffered several days prior to that time, when his automobile overturned in rounding a curve on the Elkton pike near Harrisonburg. Dr. Pierce was a native of Alabama and thirty years of age. He received his medical education at the University of Virginia, from which he graduated in 1921, shortly thereafter joining the Medical Society of Virginia. Dr. Pierce was in Virginia, visiting his wife's family at Elkton. His sister-in-law, who was in the car with him, was also seriously injured. Other occupants were unhurt. Dr. Pierce is survived by his wife, formerly Miss Helen Hammer connected with the University of Virginia Hospital.

Dr. Berton Osburne Wire,

Of Grundy, Va., died in a hospital at Welch, W. Va., August 25, from injuries sustained in an automobile accident a few hours earlier. Dr. Wire was thirty-three years of age and graduated from the Medical College of Virginia in 1915. His wife survives him.

Dr. Herbert Pennell Moseley,

Of Farmville, N. C., was shot to death on August 20, by a negro, apparently drink crazed, when Dr. Moseley went to the home of the negro in response to a professional call. Dr. Moseley, who was thirty-seven years of age, graduated from the University College of Medicine, Richmond, in 1912, following which he served an internship at St. Vincent's Hospital, Norfolk. He was a World War veteran and a Shriner. He is survived by his wife.

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